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ABSTRACT

This document contains 21 papers presented at a conference designed to find solutions to the educational financing problems of developing nations. Papers in the first section present general trends and principles. The next section focuses on descriptions of the techniques used by educational planning and budget officials in establishing and financing their national educational budgets. The last two sections are concerned with the question of student financing and the principles of State and local financing. The final section forecasts the financial implications of educational expansion. (RA)

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STUDY GROUP IN THE ECONOMICS
OF EDUCATION

FINANCING OF EDUCATION FOR ECONOMIC GROWTH

Papers prepared for the Conference
organised by the
Directorate for Scientific Affairs of OECD
held in Paris, 21st-24th September 1964

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EA 003 881

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Paris 1966

The Organisation for Economic Co-operation and Development was set up under a Convention signed in Paris on 14th December 1960 by the Member countries of the Organisation for European Economic Co-operation and by Canada and the United States. This Convention provides that the OECD shall promote policies designed :

- *to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the world economy ;*
- *to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development ;*
- *to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.*

The legal personality possessed by the Organisation for European Economic Co-operation continues in the OECD which came into being on 30th September 1961.

The members of OECD are Austria, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

EDITOR'S NOTE

The OECD Conference on the Financing of Education for Economic Growth was held 21st-24th September 1964 in Paris. It had been organised by the Study Group in the Economics of Education, as part of the programme of the Directorate for Scientific Affairs. This programme, directed toward establishing the foundation for long term educational strategy in the OECD countries, was based on the recognition that education makes an essential contribution to economic growth and social progress, while making substantial claims on the nation's economic resources.

Consistent with Study Group practice, the meeting was attended by academic experts as well as government officials responsible for policies in educational and economic planning and in government finance. Their discussion was based in large part on the research papers which had been prepared for the conference and which are included in this volume. Divergent opinions were expressed about the solutions which could be considered practical or acceptable. Nevertheless there was unanimity on the magnitude of the problems faced by educational finance officials.

The educational targets established by OECD countries have been characterised by a desire to overcome the deficiencies of past educational programmes; a desire to expand the system in response to the rapidly growing school population; and a desire to respond to the increased educational needs of the more complex labour force required by expanding industrialised economies.

All these ambitious objectives have implied increases in the level of expenditures which were more rapid than the anticipated increases in the national income upon which the government revenue is based. Simultaneously, educational expenditures were competing with increasing pressure from other essential branches of the public sector.

Before these educational targets could be translated into operational programmes, there would have to be a greater understanding of their financial implications. Do the existing systems of taxes and budgets provide the resources needed to implement the ambitious educational goals? If not, what are the new measures which will have to be adopted to assure success in achieving these targets? And if such new tools cannot be realistically expected, and financial constraints require serious changes in these educational growth patterns, what systems of educational priorities should be considered? The Study Group directed its investigation to these questions, amongst others.

The first part of the meeting, and accordingly of this volume, was devoted to the particular problems and principles of educational finance of the less developed areas. Statistical analyses of educational expenditures in these areas resulted in contributions to the understanding of these expenditures, as well as to the recognition of the need for improvements in the data and the methods of investigation.

It was intended that the bulk of the research would be directed to the solution of the educational financing questions of the developing nations. In this regard, general principles and trends were presented in Section A. In Section B, senior educational planning and budget officials of OECD member countries described the techniques used to establish their national educational budgets and to finance these budgets.

Section C was concerned with the questions of the student financing; Section D, principles of state and local financing; and Section E, forecasts of financial implications in the educational expansion. Considerable attention was devoted here to the work of the OECD Mediterranean Regional Project.

The final part of the volume serves to evaluate the status of the research which has already been completed, to summarise the discussion at the Conference, *to indicate the fields requiring further investigation, and the Conferences which would still have to be held. The policy issues and implications of the Conference were indicated by experts in public educational finance and planning. The list of those participating and contributing to the Conference complete the report.*

It is appropriate to note that while the Study Group traditionally hopes for the highest professional competence in its experts, it permits and even encourages a wide degree of independence in their viewpoints. Accordingly, these reports remain the responsibility of the author's, and are not necessarily representative of the viewpoint of the Organisation or any of the sponsoring agencies.

The practice of publishing the papers and proceedings of the meetings of the Study Group has made this volume, number four in the series. The first was the Economic Aspects of Higher Education, *the second, the* Residual Factor and Economic Growth *and the one which appeared just prior to this, was entitled* Organisational Problems in Planning Educational Development.

Lucille REIFMAN

CONTENTS

INTRODUCTORY REMARKS 9

Part I
FINANCING EDUCATION IN DEVELOPING NATIONS

A. CONCEPTS

1. Internal Fiscal Policies and Education Programmes in Developing Nations 17
ALAN PREST.

2. Notes on Educational Investment in Developing Nations 31
Richard MUSGRAVE.

3. External Aid for Investment in Education in Developing Countries . . . 41
Richard GOODE.

B. STATISTICAL ASPECTS

4. Financial Aspects of the Educational Expansion in Developing Regions : Some Quantitative Estimates 59
NETHERLANDS ECONOMIC INSTITUTE.

5. Educational Expenditure in Developing Areas : Some Statistical Aspects 73
Daniel BLOT and Michel DEBEAUVAIS.

Part II
FINANCING EDUCATION IN DEVELOPED NATIONS

A. GENERAL CONCEPTS

6. Economic Growth and the Principles of Educational Finance in Developed Countries 89
Alan PEACOCK and Jack WISEMAN.

7. Public Expenditures on Education 103
Seymour HARRIS.

B. CASE STUDIES IN EDUCATIONAL FINANCE AND BUDGETS

8. The Financing of Education under a Centralised System : France . . . 153
André GARCIA.

9. Budgetary Control and Yardsticks for Assessing Educational Expenditures in Norway 169
Kjell EIDE.

10. Control over Educational Expenditure in the United Kingdom 185
John EMBLING.

11. The Financing of Education in France, Great Britain, Norway and Germany 197
André GARCIA.

C. STUDENT FINANCING MEASURES

12. Student Financing and Enrolment in Higher Education 213
Seymour HARRIS.

13. Student Aid 251
Friedrich EDDING.

D. STATE AND LOCAL FINANCING

14. Financing Secondary School Expansion 267
Selma MUSHKIN.

15. Local and Central Government Problems in the Financing of Education. 299
Francesco FORTE.

E. FORECASTS OF THE FINANCIAL IMPLICATIONS OF EDUCATIONAL EXPANSION

16. Financial Implications of the Expansion, by 1970, of Public and Educational Expenditures in Five Countries of the European Economic Community 337
Paul SENF.

17. Educational Expenditures in the Countries of the Mediterranean Regional Project 369
SECRETARIAT.

18. Financial Implications of the Mediterranean Regional Project 383
John VAIZEY.

Part III

SUMMARY REPORTS

19. General Report of the Discussion 399
Alan WILLIAMS.

20. Implications of the Conference for Further Research 409
Joseph A. PECHMAN.

21. Policy Implications of the Conference for EIP Countries 417
Kjell EIDE and John EMBLING.

List of Participants at the Conference 423

INTRODUCTORY REMARKS

by

Michael HARRIS

Deputy Secretary-General of the OECD

I would like to welcome you to this Meeting on behalf of the Secretary-General of the Organisation. In so doing I wish to offer his personal appreciation and that of the Organisation, for the work of the Study Group in the Economics of Education. I am sorry that Dr. Henning Friis, the Chairman, was not able to be here to receive our gratitude for the work of this Group and for his personal Chairmanship over a long period of time. At Mr. Friis' request, Mr. John F. Embling, Under-Secretary of the Department of Education and Science of the United Kingdom will act as the General Chairman of this Conference.

The OECD Conference on Education and Economic Growth, which took place in Washington some three years ago, initiated a significant new interest which has continued to be a concern of the Organisation. It has become recognized that the objective of the Organisation as outlined in its Convention to promote policies designed to achieve the highest sustainable economic growth is dependent, amongst other things, on the performance of the educational systems in the Member countries. This growing concern has raised many problems of importance to the Organisation and to the Member countries.

If we look at the position today in regard to the financing of education we come perhaps to a less optimistic conclusion than that put forward by the authors of that pioneering report, « Targets for Education in Europe in 1970 ». Svennilson, Edding and Elvin came to the final conclusion that

> « viewed against the background of the achievements in the past, the targets for 1970 do not appear unreasonable. Given the pre-condition of steady economic growth the OECD can undertake with confidence the expansion and improvement of their educational systems in the coming decade. »

The papers submitted to the Conference today, however, raise questions about whether it will be possible to marshall the extensive financial resources needed to achieve the growth targets established by the various studies. The achievement of the outputs which have been forecast appear to impose very large burdens of finance on the OECD countries. The rate of growth in the education budgets makes the financing of education one of the most important, complex and intractable problems facing our policy-makers. This emerges clearly, for example, from the Secretariat paper on the expenditure implications of the Mediterranean Regional Project.

Some very hard questions have been raised and must be faced. Whether or not education pays, it certainly has to be paid for. And one of the questions before this Conference is *how* can it be paid for ? This question is of great concern to economists, to educators, and to government policy makers.

One also may question the feasibility of the targets put forward to Member governments by these recent national and international studies. These targets have admittedly performed a valuable function in arousing a vigorous attitude towards educational expansion. But we are now passing into the phases of practical action, and it has become necessary to ask whether the targets do not need to be adjusted to the likely limitations of finance. Are educational budgets likely to rise to the levels required ? Can the necessary techniques of financing be developed sufficiently quickly ? Or, must the targets be cut back to financial realities ? These questions are fundamental to the policies and decisions facing governments in the very immediate future.

The magnitude of the educational expansion will inevitably have a very large effect on the social objectives of education ; for example, the equality of education opportunity, the regional distribution of education and in many other ways. This raises additional questions as to whether or not educators have sufficiently examined the extent to which methods and the availability of finance directly effect the social goals that they have set for themselves. They make an error if they assume that the social and cultural objectives of education can be discussed or set without going into the hard realities of financial limitations and financing methods.

There is another set of questions of utmost importance. If the available resources are likely to limit expansion below that which the educator deems necessary and desirable, it is important to get the most out of these available resources. The educational administrator has no way of escaping the question : to what extent do the methods of raising, allocating and controlling funds affect the efficiency of education ? And to what extent can educators, by improving education and the methods and techniques of education make better use of the resources that will be available to them ?

It is to be hoped that the Conference will provide some answers to these questions and thereby assist the OECD Member countries in their effort to find and to better utilise the resources for educational growth. But it is fitting, because of the aims and responsibilities that have been given to the OECD, that we should also be interested in the problems of the less developed countries in the process of economic development, both in the OECD membership area and beyond. We are fortunate to have in the Chair for the discussion of this problem, Mr. Willard Thorp, the Chairman of the OECD Development Assistance Committee, the body which brings together the donor countries for the discussion of their common problems and policies in the field of aid to underdeveloped countries.

I should like to refer once again to the Washington Conference. The Conference emphasised

> « that the aim of supporting the growth of education in the underdeveloped countries themselves could only be effectively pursued if the donor countries and organisations were ready to contribute finance towards the development and operation of educational institutions and structures and not merely the exchange components thereof or technical assistance. »

I wonder whether the implications of that conclusion have been adequately investigated by the donor countries during the last three years. The same question is put again today in Dr. Goode's paper, and it is to be hoped that this Conference will take the matter a significant step forward.

In conclusion, I should like to bid you welcome and turn over the meeting to Dr. Thorp.

Part I

FINANCING EDUCATION IN DEVELOPING NATIONS

12/13

A
CONCEPTS

1

INTERNAL FISCAL POLICIES AND EDUCATION PROGRAMMES IN DEVELOPING NATIONS

Alan PREST

Christ's College, Cambridge, UK

2

NOTES ON EDUCATIONAL INVESTMENT IN DEVELOPING NATIONS

Richard MUSGRAVE

Princeton University, USA

3

EXTERNAL AID FOR INVESTMENT IN EDUCATION IN DEVELOPING COUNTRIES

Richard GOODE

International Monetary Fund, Washington DC, USA

Chapter 1

INTERNAL FISCAL POLICIES AND EDUCATION PROGRAMMES IN DEVELOPING NATIONS

by

A. R. PREST
Christ's College, Cambridge, UK

Section I of this report sets out the main educational needs and objectives for underdeveloped countries and considers the extent to which these are likely to be fulfilled without major government intervention ; in Section II, we discuss the form which government intervention should take, the arguments for transfers and subsidies versus those for public provision of education, the relative roles of central and local government, etc. ; in Section III we pass to the discussion of revenue raising — taxes, loans, etc ; Section IV brings together the threads of the argument and considers, *inter alia,* how far the ideas set out in the earlier Sections should be modified in the light of the discussion of revenue possibilities.

Section I

In discussing the educational needs and objectives of underdeveloped countries, one is tempted to start by saying that the sky is the limit — for a variety of reasons. One can appeal to current statistics of educational expenditure and point to the typical sort of difference between advanced and underdeveloped countries : in the former something in the order of 5 per cent of National Income is allocated to education, in the latter much more typically 1 per cent to 3 per cent[1]. Alternatively, one can point to some of the hair-raising implications of present deficiencies in educational expenditure in these countries, e.g. the proposition that of about 200 million people in Latin America today, there are some 15 million children (approximately half the total) not at school and some 40 million illiterate adults, and the prospect that, on the basis of educational provision in recent years, there may be a total of 350 million people by 1980, without any reduction in the proportion of illiterates[1]. One can also argue in terms of the likely economic benefits of additional educational provision : the great physical and mental dexterity likely to result from more years of training and schooling, better knowledge of job opportunities, greater willingness to take risks and launch out into new enterprises or new jobs, the breaking down of traditional class structures or social strata, the possible effects of slowing down rates of growth of populations — all this quite apart from the general social and ethical arguments for equality of opportunity and the like. From yet another aspect, historical examples can be given where extended educational provision does seem to have played a major part in development[2] and on this basis the cause of widespread educational advances in the have-not nations of the world to-day can be promoted.

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[1] See ***Economic Bulletin for Asia and the Far East,*** (UN, Bangkok) September, 1963, for a detailed tabulation.

Appealing as many of these arguments are from many angles, it is the duty of an economist to probe further and ask which sections of the educational field must receive priority. It may well be that political or other requirements in particular countries will dictate different priorities to those supported by economic reasoning ; but that is no excuse for not setting out the latter.

It may be simplest to start by listing those types of educational expenditure which are least easy to justify. Inevitably, there are many differences from continent to continent and from country to country but nevertheless it does seem possible to say a few things of a fairly general character. The first is that the provision of elaborate university educational facilities is unlikely to be justified in many countries. To begin with, there is the well known phenomenon of unemployed or under-employed Arts graduates in many countries. Although one might expect that market forces would in the long-run reduce the salary differentials which seem to have led to the imbalance in the past between white-collar and manual jobs, this may well be a slow process. Nothing should, therefore, be done to encourage the output of such graduates in the near future[3]. Secondly, it is extremely expensive to set up universities catering for scientific disciplines — especially medicine, engineering and the physical sciences — in any country ; and for many of the small countries of the world it is frankly prohibitive. Furthermore, this is one of the points at which advantage really can be taken of cheap foreign facilities. Given the present British system, whereby student fees amount to only 11 per cent of the total costs of running universities, it obviously makes sense for other countries to send their students there, even after allowing for extra costs of maintenance, greater risks of « brain-drains » through permanent emigration and the like. Finally, in so far as it is desirable to operate universities in underdeveloped countries, one must put in a very strong plea for providing the simplest and plainest type of education e.g. concentration on teaching rather than research, portable buildings rather than architectural monuments and double shift working rather than under-utilisation of facilities.

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[1] c.f. Ekba Gomez de Rey da Kybal, « *The Economics of Education* » in E.J. Hughes (ed.) *Education in World Perspective*, Harper and Row, New York, 1962.

[2] A particularly interesting case seems to be that of Denmark. Alva Myrdal (« The Power of Education » in E.J. Hughes, ed. *op. cit.)* argues that Denmark was still a largely feudal country at the end of the eighteenth century (e.g. males over 4 years old could not move from the place of birth) but the rapid development of universal primary education in the nineteenth century enabled Denmark to stand up to American and Russian competition in agricultural products.

[3] cf. M. Rashid, « Absorption of the Educated », International Economics Association Conference, *The Economics of Education*, 1963 (to be published).

A second issue to be faced in an educational programme is the role of adult education aimed at reducing illiteracy. There is no need to elaborate on the obvious social and political arguments for such programmes : but can they be justified on the crucial economic test of aiding productivity, growth, etc ? The answer must first depend on the costs of such schemes, e.g. how far cheap mass education techniques can be used successfully for such purposes. It may be a cruel decision to take, but one suspects that the purely *economic* benefits of such expenditures, at any rate in the case of people over, say, the age of 40, may be relatively small.

A third, and in some ways even harder, decision to take is whether one should attempt to provide some primary education for all. The magnitude of this problem varies enormously from country to country but many have to face the choice between giving two or three years' schooling to all children and giving a longer period to a much smaller number. The introduction of full and universal primary education in most African countries, at any rate, seems to be a pipedream at this stage[1]. In the end, the choice may well depend on how easily one can keep down the wastage rate, which will in time depend on parental attitudes, the economic usefulness of child labour, the size and quality of the school attendance enforcement service, etc[2].

So much for the educational needs to which it may not be possible to give top priority. On the other side of the coin — the objectives to concentrate on — the first seems to be that of secondary education. Although there are cases where the output of secondary school leavers has run ahead of demand in recent years, it would seem that the supply of people capable of operating mechanical equipment, undertaking skilled apprenticeships, working in warehouses, offices, commercial buildings etc., quite apart from agriculture, will need to be expanded and further expanded over the years. Closely allied is the need for more and more of the type which Lewis has called « subprofessional » — the people with *some* knowledge of scientific agriculture, forestry, engineering, surveying and the like. The need in such cases for one — or two — year training courses (or the equivalent training on a part-time basis over a longer period) after the secondary level must surely be a high priority in any underdeveloped country, even though the precise requirements of types of personnel will no doubt differ from place to place. Another particular point at which efforts may need to be concentrated is the education of women. Few, if any, countries give the necessary emphasis to the training of womanpower, but it would seem likely that deficiencies in this regard are even greater in underdeveloped than in developed countries.

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[1] More, of course, in some countries than in others, e.g. N. Nigeria compared to the rest of that country.

[2] On wastage rates in Nigeria, cf. PNC Okigbo, « Criteria for Public Expenditure on Education », IEA Conference (*op. cit.*). In Eastern Nigeria in 1960, it was reckoned that 52 per cent of primary school entrants dropped out by the end of the sixth year of school.

An illustration of one way in which these conflicting objectives have been satisfied, or at least reconciled, is to be found in the data for Pakistan. The following table shows the distribution of expenditure between different sectors of education :

ALLOCATIONS TO EDUCATION AND TRAINING :
FIRST AND SECOND PLAN

	FIRST PLAN		SECOND PLAN	
	AMOUNT *Million rupees*	PER CENT	AMOUNT *Million rupees*	PER CENT
Primary	105	18	328	25
Secondary	155	27	290	22
Teacher training	38	6	50	4
Technical	50	8	182	14
Colleges	68	12	55	4
Universities	87	15	135	10
Other	77	14	283	21
Total	580	100	1,323	100

Source : Rashid, *op. cit.*

It will be noticed that the changes between the two Plan periods do not completely tie in with the discussion above. This may well be justifiable in the particular case of Pakistan, though it should also be noted that these allocations have been criticised on precisely these grounds.

When all is said and done about priorities, the inherent logic of the different steps in the educational ladder must be accepted. Any attempt to expand numbers at higher stages must involve on the one hand, a sufficient supply of teachers and, on the other, sufficient recruits from the lower echelons. There is also another point to note, which is not so commonly recognised. There is a sense in which something akin to the acceleration principle, familiar in the literature on physical capital formation, is applicable. With a given number of primary school children and a given standard of teaching, the need for teachers is limited to replacement of wastage through retirement, resignation or death ; but a given percentage increase in the number of children taught (standards remaining unchanged) will imply a much more than proportionate increase in the number of teachers, e.g. if the average length of teacher service is 20 years, 5 per cent of the stock tends to be replaced each year ; a 5 per cent increase in numbers of children in any one year therefore implies a doubling of teacher intake in that year. The implications for teacher training in situations where the numbers of children are increasing, where the proportion whose parents ask for schooling is increasing, and where attempts are being made to raise teaching standards or numbers of years in school, need no emphasising here.

Having surveyed the likely pattern of educational requirements, we now have to clear the ground further by asking about the sort of progress likely in the absence of substantial state intervention. First, it is clear that the market is unlikely to satisfy educational demands in the same way that it may satisfy needs for clothing, food and the like. One reason is the well recognised point that an individual's demand for educational intake is likely to be less than is socially justified, in that some of the benefits accrue to others and not the purchasers of education ; similar considerations also operate on the supply side in that firms may provide training courses for men who then leave their employment. It is extremely difficult to quantify effects of this sort but they are often alleged to be important in advanced countries[1] and it seems unlikely that they will be less so in underdeveloped countries. But even if such points as this were not substantial, it seems inconceivable that private enterprise, operating in response to market stimuli, could provide anything like « adequate » educational facilities, given the imperfections of capital markets and the traditional attitudes towards risk-taking and innovation which are so common.

This does not mean that the role of the private sector can be completely neglected. There are many countries where charitable foundations or religious orders, as distinct from profit-making enterprises, have made substantial contributions to educational development. An outstanding example is that of the Missions in Africa. As recently as 1960, for instance, the number in such primary schools in Northern Nigeria was 174,000 compared to a total of 116,000 in Native Authority Schools[2]. Obviously, such organisations play an indispensable role in education in such countries and as they are also a means of bringing in external aid they should clearly be encouraged by selective tax remissions (e.g. local property taxes) and not just tolerated as a *pis aller*. At the same time the role of such organisations is limited ; they are unlikely to attempt to supply all the educational needs we have listed, and even if they did, might not be uniformly successful in their efforts[3].

The role which the private sector is likely to be able to play in meeting the educational needs sketched above is therefore strictly limited. We must now turn to the discussion of the possible forms which public intervention can take.

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[1] cf. Committee on Higher Education (Robbins Committee), *Higher Education* (Cmnd. 2154, HMSO, London, 1963) p. 205 « Education, in short, furnishes perhaps the most conspicuous example of the importance in social analysis of the difference between what economists call the 'private' and the 'social' net product of investment. »

[2] H. Oldman, *The Administration of Primary Education*, Kaduna, 1962.

[3] cf. J. Vaizey, *The Control of Education* (Faber & Faber, London, 1963) for the point that teaching by some denominational bodies has sometimes had the effect of bolstering traditional rights and taboos.

Section II

In principle, government financial intervention in the educational field can take two forms : there may be a system of public provision of schools, training colleges and the like or a system of grants and loans to individuals to enable them to purchase more educational facilities than they would choose in a purely market economy. An outline of the way in which the latter type of system could work in the United Kingdom has recently been published[1]. The essential features are to distinguish between ordinary schooling (parents to be given vouchers in respect of their children, and vouchers to be of a value sufficient to meet minimum education costs) and higher education (the general source of finance to be state loans to students — repayment being geared to future earnings) supplemented by outright grants in respect of a certain proportion of student outgoings. Special provisions are suggested for students at ages between school-leaving and university-entry. There are clearly a number of claims to be made for ideas of this sort, e.g. the argument that any such scheme is more liberal, in the sense of giving greater initiative or responsibility to the individual, than the standard type of state provision ; or that it can readily be made to serve income distribution ends if the schooling vouchers are made taxable in the hands of parents. We should look at this type of arrangement to see whether it is relevant to underdeveloped countries.

As far as vouchers for schooling are concerned, the arguments do not seem strong. A fundamental assumption is that the individual family is sufficiently knowledgeable to use the vouchers in the way best fitted for its own needs. This may be conceivable in North America or Western Europe ; it hardly seems to fit the realities of life in tropical Africa. It is perfectly true that one can argue that if an individual has the right to vote there is an implicit supposition that he should be capable of exercising choice with a voucher type of system ; but in reality one may simply be compounding bad, or at best conventional, choices by introducing this kind of system. Nor is it easy to see how a voucher system could possibly be handled administratively in countries with poor postal systems, illiterate recipients and climates which soon play havoc with small pieces of paper. Finally, the ways and lack of ways, in which private enterprise has manifested itself in the past do not inspire confidence that a large variety of schools would rise instantaneously at the waving of a number of (paper) wands. I have previously[2] argued against the introduction of tax schemes of the Kaldor-Higgins type involving large amounts of forms and paper work ; some of the arguments in that field would seem to apply here too. So even though a case for this kind of system can be made in advanced countries, it seems a most unlikely starter in underdeveloped countries[1].

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[1] A. T. Peacock and J. Wiseman, *Education for Democrats* (Hobart Paper 25, Institute of Economic Affairs, London, 1964).

[2] cf. A. R. Prest, *Public Finance in Underdeveloped Countries*, Weidenfeld & Nicolson, London, 1962, pp. 29-31.

One must also feel somewhat doubtful about schemes of repayable loans to students undertaking higher education, though for rather different reasons. Although there are some strong arguments in favour of such schemes in advanced countries — I myself was one of the advocates of this type of arrangement to the Robbins Committee on Higher Education in the United Kingdom — they carry less persuasion in underdeveloped countries. One point is that redistributional effects become important when university education expenditure becomes a large component of total education expenditure, but this is, and should be, some way off in underdeveloped countries. Another point of great practical importance is that if a sizeable proportion of students are trained at universities overseas the incentive to return home will be considerably less if they know that there is a specific liability to be met in respect of their training. It is a recognised difficulty of schemes of this sort that there is unlikely to be a full recovery of expenditure in respect of people who emigrate after training ; the difficulty is even greater if a lot of people go abroad to undertake their training. Finally, the efficiency and coverage of the personal income tax system is such in most of these countries that one hesitates to add any further complications to it.

But even if the possibilities of concentrating government intervention mainly on grants and transfers rather than collective provision seem remote, there are still a number of particular ways in which this kind of policy can be implemented. One is to give marginal financial assistance to local communities endeavouring to improve their educational facilities : this may well help them to enlist resources in the form of labour and materials which would otherwise go unused. Side by side with this sort of encouragement there should be tax relief or grants to missions and similar voluntary agencies ; as argued above, this will generate or at least facilitate a far larger total expenditure by such bodies, on the basis of the gifts from abroad and the local school fees they receive[2]. Another form of financial assistance for educational development is tax relief or subsidies to firms which have apprenticeship and training schemes. There is in fact a further point here of quite considerable importance. Many countries have adopted systems of accelerated depreciation —

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[1] Peacock and Wiseman would themselves appear to take the same view : « The policy which might be considered appropriate for a poor country with a high degree of illiteracy is likely to be quite different from that thought suitable for a rich country with a high level of general education » (*op. cit.* p. 21).

An awkward dilemma remains here for advocates of this type of arrangement. Underdeveloped countries without much of an educational system may not be able to operate it ; but advanced countries may be so imbued with the traditions of state provision that they may not wish to do so.

[2] Oldman, *op. cit.* gives details of fees paid in mission schools in Northern Nigeria. They vary enormously according to the denomination of the mission, the sex of the child, the class involved, etc. The maximum in 1960-61 for day schools seems to have been £4.10s. p.a., plus charges for textbooks and stationery.

investment allowances, initial allowances and the like — in recent years. As a consequence, one may find a bias towards the adoption of capital-intensive methods unless there is some correction on the labour side. The choice of techniques is an immensely complicated subject into which we cannot enter here. But it is fairly clear that if one combines large financial sops for physical capital investment with the traditional employer reluctance to train men who may leave his employment as soon as they are fully trained, there is a serious danger of imbalance unless one has some scheme of the type suggested. An allied suggestion would be a government grant-aiding policy towards the founding and maintenance of bodies akin to the Mechanics Institutes which played an important role in the development of technical skill and knowledge in a number of industrial cities in Britain in the nineteenth century. Still another way in which emphasis might be placed on grants rather than public provision is in respect of institutions of higher learning, and especially universities. There is in fact a threefold choice here : a university can be a state-controlled institution (e.g. the Colleges of Advanced Technology in the United Kingdom) ; it may be independent but receive most of its income from some form of state grant (e.g. the typical United Kingdom university today) ; it may receive all its income from fees and endowments, even though the State itself may be the source of the fees paid out by students. There is a lot to be said for the latter both in terms of ensuring greater independence to universities, greater freedom from State interference and more flexible attitudes to educational needs. This is an important issue which merits further discussion, but as it concerns the form in which payments are made rather than their total we shall not pursue it here.

The above examples of ways in which the State can assist education other than by complete state provision are intended to be illustrative rather than exhaustive. It will suffice if they show that despite our rejection of complete schemes for schooling-by-vouchers, etc., we think that there are a number of points at which judicious State intervention may be extremely effective.

On the general question of state provision, there is obviously a vast amount to be said from many different angles. But as we are concerned here with the financial aspects only, the main topic is essentially one of cost control or increasing productivity in educational spending. As usual, there is no simple, uniform procedure to be followed, but certain points, obvious as they are, bear re-iteration. One is that slavish imitation of foreign systems and methods is most unlikely to be rewarding. Professor Lewis has rightly levied devastating criticism against some African universities on these grounds[1]. At the same time dislike of colonialism and the heady whiff of independence should not blind countries to the fact that they can learn from others in this, as in most other fields. One particular example is the remarkable feat of the United Kingdom Ministry of

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[1] W.A. Lewis « Priorities for Educational Expansion », *Policy Conference On Economic Growth and Investment in Education*, Vol. III, OECD, Paris, 1962, pp. 45-6.

Education in keeping down costs of school buildings in the post-war period by clever architectural planning and building organisation, despite the continuous rise in labour and materials costs. There is clearly a great deal to be said in the whole field of government procurement and financial control[1].

One final point remains in this Section. We have so far spoken of government as if it were one undivided entity. In reality, one must recognise the division between central and local government in all countries, and further divisions in Federal countries. There are clearly arguments in favour of a good deal of non-central responsibility : it is often argued that the more localised authorities are likely to be better at operating projects which mainly benefit people in their area on the grounds that they can instil a greater interest in them among the local population, and they can frequently tap sources of revenue (including contributions in kind such as voluntary help in building schools) which a remote central government would be quite incapable of reaching. At the same time, the greater the degree of local autonomy the wider the disparity is likely to be between standards of services. It is thus likely to be necessary to have some system of differential grants from the central government to prevent the development of very wide disparities between rich and poor authorities. This in turn leads to a more complicated administrative system than would otherwise be necessary. Any practical solution must be based on a recognition of these conflicting interests and difficulties, but it would be outside the bounds of our brief to go further into this.

Section III

We shall be concerned here with the possibilities of raising special taxes or loans for educational purposes. Obviously one can simply say that the kind of educational programme sketched out above should be met from general revenue. In this case, the only topic for discussion now would be the general question of the arrangement of taxation and loans in underdeveloped countries ; how one should balance the merits of more educational spending against more spending on other things ; or against lower taxes. Before accepting any such fatalistic solution, it seems sensible to survey the possibilities of special taxes ; for even though one cannot expect to raise sufficient revenue this way to meet total educational expenditure, no source of revenue can be neglected in the straitened budgetary conditions prevailing in many of these countries. We must look for cases where there are not only tangible benefits from education to specific individuals or corporate bodies, but where these benefits are apparent to the recipients as well as to the impartial observer. We shall take taxes first and loans later.

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[1] A well-organised system of cost control may be a *sine qua non* for procuring loans for educational purposes from International Agents (cf. Hugh B. Ripman « International Financing of Educational Investment », IEA Conference, *op. cit.).*

We have already touched on the possibilities of local authorities collecting contributions in kind, and need not pursue this question further. We have also referred to fees charged at Mission Schools. This immediately raises the question of placing more emphasis on fees at local authority primary schools. Such schools charged small fees in England during the nineteenth century, and in societies where it is admittedly impossible to offer universal primary education at this stage of development the case for fees is strengthened, not weakened. If only a certain proportion of children receive schooling, the arguments for charging their parents some part of the costs they incur is stronger than in the case when all children receive more or less the same amount of schooling — when it may be simplest and most expedient to finance expenditure out of general revenue. The experience of the Missions has shown that it is accepted that different charges should be made for different services supplied, although concessions can be made in cases of real hardship. Needless to say, there are examples of these sorts of charges in a number of countries[1], but it may be asked whether the policy is pursued as energetically as it might be[2].

A different set of taxes can be envisaged for industry and agriculture. There is the clear case where industrial firms benefit from the public provision of technical and vocational training and it seems eminently reasonable, as has been recommended in Pakistan[3], that they should make a specific contribution in recognition. The form of the tax needs a little thought. One might at first think that the basis ought to be payroll or total numbers employed, or at any rate the number of skilled people employed, but this raises our old problem : the encouragement of capital-intensive methods in circumstances where they may be inappropriate — given the usual types of accelerated depreciation provisions. Alternative bases might be value added or turnover or profits. The first two of these three run into well-known difficulties and so it may well be that in the end the best answer is a small supplementary tax on profits — in the same way as some Latin American countries levy supplementary (though not so small) profits taxes for financing housing developments and similar activities.

Essentially the same principle applies to agriculture. It is an accepted principle in some countries that farmers should be charged for the provision of water as a result of public irrigation works ; in others, improvements to river drainage systems which remove superfluous water have also been the occasion of charges to specific farms and farming areas. If this principle is accepted, why should it not be extended to the provision of agricultural services of various kinds, e.g. technical advisory services, costs of running or providing mechanical aids, etc ? The difficulty is not so much one of principle but rather of implementation. The difficulties of levying and collecting contributions from farmers are well known, and the more obvious bases for tax such as profits or output or acreage impossibly hard to administer. It may well be that in some countries the only method would be a poll tax basis and that clearly limits the amount of revenue obtainable in this way. It is, of course, much easier if there is a well-established and smoothly-operating system of land taxation but this is more usually an academic pipedream than a practical reality.

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[1] cf. U.K. Hicks, *Development from Below*, (Oxford University Press, Oxford, 1961) for some account of these matters (e.g. p. 259).

[2] It has recently been suggested in the United Kingdom (*Times*, London, 1st April, 1964) that Ayr County Council might consider a lottery or sweepstake as a means of raising funds for school building. This is a possibility worth exploring, especially in those countries which have subscribed heavily to British football pools in recent years.

[3] cf. *Report of the Commission on National Education*, Government of Pakistan, Ministry of Education, Karachi, 1959.

We have discussed the arguments for refundable loans to students undertaking higher education. Although there is a good deal to be said for the general principle, the practical difficulties in many unerdeveloped countries would seem to rule it out as a general method. However, the arguments for such a system are likely to grow as a country grows and it should certainly be kept in mind as a possibility in future years.

One more type of financing arrangement should be mentioned. In Yugoslavia, social funds for education have been established in the Communes, Republics, autonomous regions and the Federal Republic, and their operation is explained in these words[1] :

> These funds are supported by « a special tax levied on the incomes of all employed persons, and by drawing on budgets and some other sources ; these funds are independent, and self-managed legal entities and are utilised for the implementation of long-term development plans. »

Without detailed knowledge of the Yugoslav system, it is not easy to say exactly how it works. One suspects, however, that raising education finance in this form is much more akin to the system of meeting the expenditure out of general revenue, rather than levying particular contributions on recipients of particular educational benefits. To illustrate the point from United Kingdom finances : the basic flat rate National Insurance contribution levied on everyone who is gainfully occupied is essentially a general tax, whereas the graduated contribution which is levied on a much smaller number of people, and to a differential extent, results in particular benefits to those particular groups of people. It is the latter rather than the former type of device in which we are interested here. The Yugoslav system would seem to lie pretty firmly in the former category.

We have discussed special taxes at some length, and must now briefly turn to special loans. There are examples of this technique in Europe : it is understood that Spain has recently made a bond-issue for the finance of school building[2]. Whether, however, there is a great deal to be said for devoting a lot of attention to such ideas is another matter. First there are the theoretical issues of loans versus taxes — whether government borrowing is likely to lead to undue inflationary pressure, or to balance of payements difficulties, whether it results in the substitution of educational capital formation for consumption or other types of capital formation, etc. Secondly, there is always the point that even if borrowing for school building purposes is possible, borrowing for meeting costs of teachers' salaries, textbooks, building maintenance, etc., is an unlikely eventuality. Therefore any system of borrowing must be supplemented by making tax revenue available for these purposes. Thirdly, local authorities may be the more appropriate instrument for launching bond issues of this sort ; but there is a real difficulty about meeting interest payments in this case. Whereas a local authority bond issue for, say, road improvements or public utility extensions results in *local* benefits, the building of new schools will benefit the community as a *whole* but not necessarily the immediate locality, in so far as the products of the educational system emigrate to other areas. So the result of borrowing by one local authority may be to confer the benefits of higher productivity, etc., on other authorities. We must therefore recognise that there are some fairly tight limits to the extent to which special bond finance is likely to be used for these purposes.

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[1] Yugoslavia, *Education and Development,* The Mediterranean Regional Project, OECD, Paris, 1965, p. 38.

[2] D. Joaquin Tena Artigas, « Plan for School Construction in Spain » *Planning Education for Economic and Social Development,* Mediterranean Regional Project, OECD, Paris, 1963 (p. 226).

Section IV

We have surveyed educational needs, the ways in which governments are likely to be involved in meeting them and the specific tax and loan arrangements which might be possible. One major question now remains : instead of putting expenditure first and revenue second, we must reverse the process. In other words, should the educational needs and priorities be adjusted in the light of the specific revenues likely to be forthcoming from the taxes, etc., we have suggested ?

The proposition that specific expenditures should be tied to specific revenues[1] is an old one in the history of public finance. Most writers in the field (including the author)[2] have dismissed it without much ado, on the grounds that it leads to inefficiency and wastage in the allocation of resources. Recently, however, there has been a spirited defence of the general proposition of earmarking by J. M. Buchanan[3] and we must, therefore, examine the arguments advanced to see whether they have any relevance here.

The essence of Buchanan's position is that he is taking an individualistic view of the process of social choice. If, he argues, the individual is to be able to make a rational choice between the costs and benefits of any public service, he must be allowed to make that choice separately from that relating to any other public service.

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[1] « Earmarking », « special funds », « segregated accounts » are all different names for this same process.

[2] *Public Finance in Underdeveloped Countries, op. cit.*, pp. 123-4.

[3] J. M. Buchanan « The Economics of Earmarked Taxes », *Journal of Political Economy*, October, 1963.

If earmarking is adopted, with specific revenues for specific expenditures, the individual then has « a means of compartmentalising fiscal decisions », as he puts it. On the other hand, general-fund budgeting gives the individual a say only in determining the size of aggregate outlay, rather than the individual components. Earmarking, he argues, is equivalent to allowing an individual to choose the amount he wants of each individual commodity in a market ; non-earmarking is equivalent to a specific tie-in sale in a market, when, say, the individual can buy commodity A only if he buys commodity B. Buchanan then goes on to argue that the composition of public goods and services in the general-fund case is likely to differ from, and may be inferior to, that in the earmarking case.

Is this kind of reasoning relevant to the case we are considering here ? The answer must surely be « No ». We advanced the proposition earlier that education, as a whole, was likely to be under-produced in a market economy, because of divergences between private and social costs and benefits. If this is so, then the suggestion that the public sector should be organised in such a way as to stimulate a market economy, which is what the Buchanan proposition seems to amount to, is clearly unacceptable. Nor does the argument seem more persuasive if one looks at the individual components of education expenditure. If there were any reason to think that the receipts from any one kind of education tax were likely to be more than the expenditure determined by the conventional budgetary processes, one would have to ask whether this ought to be taken as a reason for increasing expenditure in that line. But with the sorts of taxes we have suggested this is clearly not so — they may make useful contributions to the total financial requirements, but that is about all. So we must conclude that there is no obvious case for saying that the catalogue of revenue possibilities should lead us to rethink expenditure needs and priorities[1].

We have confined ourselves to fairly general principles in this discussion. No one should think, however, that the enormity of the practical difficulties in implementing some of these ideas is not appreciated. To take one recent example, the estimate of the population of Nigeria has recently been revised after a new census from something in the order of 40 millions to some 60 millions. This clearly plays havoc with all previous estimates of the percentage of children attending school, as well as the degree of illiteracy. Another issue is one raised by H. W. Singer[2] : given present life expectancies in underdeveloped countries, and hence the relatively small time span over which there can be a yield from educational investment, how readily can one justify it compared to physical investment ? But if one looks forward to longer life expectancies, and the likely expenditure on medical and health measures which will be necessary to reach this objective, how much in the way of real resources will there be to spare for education ? This is a real dilemma and the dangers of being impaled on one of the horns are only too obvious. But one must never forget that there are many arguments for education other than the more narrowly economic one with which we have been mainly concerned in this paper. Most fundamental of all is that people must be educated sufficiently to understand the processes and mechanism of politics in a free and democratic society. If this objective is not fulfilled, we may well be faced with a world distinguished for the rapidity of the transition from inefficient feudalism to efficient totalitarianism, but not much else.

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[1] The proposition that separate local decision units for schools (e.g. local school boards with powers to raise revenue for educational purposes) will lead to more expenditure on education than that forthcoming from general fund financing does not find support in the data collected by J. Margolis, « Metropolitan Finance Problems ; Territories, Functions and Growth », *Public Finances : Needs, Sources and Utilisations*, National Bureau of Economic Research, New York, 1961, pp. 263-6.

[2] *Policy Conference on Economic Growth and Investment in Education, op. cit.*, p. 88.

Chapter 2

NOTES ON EDUCATIONAL INVESTMENT IN DEVELOPING NATIONS

by

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INTRODUCTION

One might expect that the vast advances in technology made during recent decades would have gone far to facilitate the process of economic development. While the release of resources for capital formation remains difficult in the early stages of development in view of the low standard of living from which savings must be diverted, most poor countries manage to squeeze out a margin of capital formation of 4 to 5 per cent of GNP. Since such capital formation (net or replacement) may embody new techniques, and since there is a wide gap between it and the prevailing primitive technique, one might expect the rate of return on new capital to be enormous. Provided that population can be controlled and assuming a reasonably favourable resource endowment, an even modest rate of capital formation might thus be expected to result in substantial gains in per capita income. Under these conditions it should not be too difficult, therefore, to progress along the pre-blazed path of western technology.

Why, then, does this fail to come about ? Why do low-income countries even those with relatively good resource endowment, progress at a rate of only 2 to 4 per cent, with little gain in per capita income ? And why is the marginal output to capital ratio not greatly above that of developed countries ? The answer usually given is « limitations imposed by the human factor ». If such is the case, these barriers must be reduced if economic development is to proceed at its potential rate. Education, obviously, is not the only factor in this connection(investment in public health should also be noted) but it is of vital importance, especially where the barriers are of a cultural rather than of a physical kind.

The educational product, in the context of economic development, therefore, not only includes the components of education usually distinguished as consumption (i.e., enjoyment of the fuller life permitted by education) and as direct investment (with the gains accruing « internally » in the form of increased earnings to the educated person), but also education as investment in the functioning of the economic and social system at large. These latter gains accrue « externally », not only to those in whom the educational input is invested, but also to other members of the community.

The theory of investment planning may be looked at from the micro or macro level. In macro terms, the problem is to determine the alternative growth path available to the economy, assuming the best structure of capital formation to apply in each case, and then to choose the optimum path on the basis of the community's time preference. In micro terms, the problem is one of rating alternative investment projects and of deciding which one is to be included within a given level of overall capital formation[1]. There is no reason why investment in human resources by education should not be included in such an analysis. However, education investment has certain characteristics — quite apart from the previously noted factor of externality — which pose special problems and should be noted at the outset.

CHARACTERISTICS OF EDUCATIONAL INVESTMENT

The product of education outlays, to begin with, carries joint features of consumption and investment. For this reason, the share of resources allocated to education cannot be considered wholly an investment outlay. The consumption component has to compete with alternative forms of consumption, while the investment component must compete with alternative forms of capital formation. To the extent that the two parts are inseparable, the proper allocation of resources to education should leave the rate of return thereon (computed as ratio of the present value of additional earnings to investment cost) below that of alternative investments which do not carry joint consumption components.

This distinction between the consumption and capital formation aspects of education outlays, however, is somewhat misleading. The consumption product of education may be divided into current consumption (the delights of attending school) and future consumption (the ability to appreciate life more fully later on). Since the latter is much the major element, the consumption component is largely in the nature of a durable consumer good and hence investment. The essential distinction, thus, is not between the consumption and investment aspects of education output, but between education investment which generates imputed income (the fuller life later on) and education investment which generates increased factor earnings to the labour supplied by the educated person.

What weight is to be given to the two components in the development context, and how is this to be reflected in the pattern of the education programme ? Recent writers have pointed to the extension of secondary education as being the primary goal of education policy in countries with a low level of educational capital stock, with extension of elementary education and technical training at the subsequent level of capital stock, and expansion of higher education at a more advanced stage[1]. While this priority is derived from the projected needs for various types of skill and training, it also suggests that the imputed-income component of the education mix tends to be of particularly great importance at the early stages.

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[1] For a survey of the discussion on investment criteria, see Otto Eckstein, « A Survey of the Theory of Public Expenditure Criteria », in *Public Finances, Needs, Sources and Utilization*, National Bureau, Princeton University Press, 1961.

Secondly, investment in education is characterized by a gestation period which is substantially longer than that of many other types of capital formation. Indeed, education seems the time-consuming, Boehm-Bawerkian type of investment *par excellence*. Periods of ten to twenty years may be involved, depending on how far the education process is carried, and even longer spans must be allowed for if teacher-training is taken into consideration. Even though certain skills may be acquired fairly rapidly, especially if a previous foundation is laid, the educational capital stock cannot be changed quickly, particularly for the more advanced type of education. This introduces a constraint in investment planning and demands a correspondingly longer planning horizon which in turn points to the need for public policy guidance seen in the context of a longterm development perspective, if not development plan.

A similar consideration relates to a further feature of investment in education, i.e., the relatively long useful life of the education asset. Consideration of returns over, say, a thirty-year period, lends great weight to the importance of the discount factor in assessing the relative productivity of investment in education. Since the useful life for competing investments tends frequently to be shorter, the relative case for investment in education is low if the appropriate rate of discount is high. Thus, the selection of the appropriate rate of discount is of particular importance in assessing the proper share for education in total capital formation. There being no developed capital markets which provide a clear indicator of this rate, its determination becomes essentially a matter of public policy. Investments should be ranked by a present value rather than an internal rate of return criteria. Moreover, there may well be a difference between the government's and the private investor's evaluation of present, relative to future, needs. To the extent that public policy takes a longer view, it will also tend to require a larger share for education in investment outlays.

The relatively long, useful life, moreover, makes it necessary that the type of education be chosen in order to meet future demands for particular skills. This applies less to general and elementary education, which lays a more flexible basis, but becomes of great importance for specialized and technical types of training that do not permit easy conversion. As already noted, educational planning in the context of a longer-term development view is essential.

Finally, a word regarding the resource cost of education. Recent discussions of the economics of education[1] emphasize, and rightly so, that this cost not only includes teachers' salaries, buildings and equipment, but also the opportunity cost of lost income on the part of the student. Depending on the structure of the developing country, this latter component may be of varying significance. Where there is a general surplus of labour supply, the opportunity cost of forgone earnings will be small or non-existent. Under other conditions, customary use of child labour may produce the opposite situation. While the former is the more typical case, other components of education cost (school teachers' salaries in particular) tend to be relatively high in underdeveloped countries[2]. Even though the income stream from a given factor input into education will be large (educated workers are needed to take advantage of modern techniques, and education is highly complementary to other types of capital formation) the rate of return on educational investments (relative to that on other investments) is therefore not as high as suggested by the income stream alone.

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[1] See Frederick Harbison and Charles A. Myers, *Education, Manpower and Economic Growth*, McGraw-Hill Book Co., New York, 1964, Chapters 4-6.

EXTERNALITIES

The standard procedure for determining the value of investment in education is to estimate the future stream of incremental earnings which accrue to the student, and to discount it to obtain the present value. This present value is then related to the cost of investment in obtaining the rate of return. This procedure excludes additions to output which accrue externally and to the benefit of others rather than to the educated person alone. Such oversight may be acceptable in assessing the value of education for a developed economy, but hardly for the underdeveloped country, where external benefits constitute a substantial part of the total gain.

Perhaps the most important aspect of the external benefits of education lies in the change in the social and cultural climate, incident to the widening of horizons, which education entails. As has been pointed out many times, such a change is an essential condition of success for many developing nations. At the same time, this benefit result is not an automatic consequence of education at large, but only of the proper type, quality and quantity of education. Supply of professional people who cannot be absorbed into appropriate positions may readily become an external dis-economy and source of instability.

As noted previously, different types of investments in the early stages of development tend to be highly complementary[3], and this holds *par excellence* for the proper combination of investment in education and capital equipment. Without a capable labour force modern capital equipment cannot be operated, and it is precisely the access to superior techniques that is the one hopeful factor in the development picture. Now it is true that the existence of such complementarity need not, *per se*, constitute an externality which would fail to be recorded in a perfectly functioning pricing system. If tractors can be substituted for oxen only if trained drivers are available, this will be reflected in corresponding higher wages for the driver. The trouble, however, lies in the fact that in an economy where there are as yet no tractors, the supply of drivers is unlikely to be forthcoming, and *vice versa*. The generation of growth (whether « balanced » in an overall Nurkse sense or not) requires a concerted effort to provide a chain of investments, thereby reducing the risks of individual investment and making it possible for an investment programme to succeed where individual investments would fail.

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[1] For a survey of this literature, see Chapter I in William J. Bowen, *Economic Aspects of Education*, Princeton University Press, 1964.

[2] See W. Arthur Lewis, « Priorities for Educational Expansion », *Policy Conference on Economic Growth and Investment in Education*, OECD, Washington, 1961, Part III, p. 37.

[3] See, for instance, B. Higgins, *Economic Development*, Norton, New York, 1955, Chapter 16 and the references there given.

This necessity for investment planning exists even for investments which, given the necessary supply of entrepreneurial talent, would be appropriately undertaken privately. It exists *par excellence* for investment in education. Left to household decisions, neither the market knowledge, foresight or financial requirements are present which are needed to secure adequate supplies. This is especially the case in underdeveloped countries where the whole attitude towards education has to overcome conventional barriers and become reoriented to the development process.

TARGETS

It is difficult to generalize about what constitutes a proper target for educational effort or achievement. One approach is to set a target level of income to be reached in a given period, to consider the educational position of other countries which have achieved this income level, and then to attain educational position during that period. This involves various questions of how the comparison is to be made. Should (*a*) the growth level be defined in terms of per capita income or of other indices such as percentage of the labour force outside agriculture ? Also, should (*b*) the education level be defined in stock terms (percentage of working force with given educational achievement) or in flow terms, be it in terms of enrolment (percentage of various student-age groups currently enrolled) or of financial effort (percentage of national income spent on education) ?

With regard to (*a*), the employment-ratio approach has the advantage of easier comparability since the need for deflating is avoided. Beyond this, it may also be a better index of education needs. However, the results do not seem to differ greatly for the two indicators[1]. With regard to (*b*), the truly relevant factor for any given income level is the stock of education capital, whereas the enrolment or expenditure level is relevant in relation to growth rates. Unfortunately, the former is more difficult to compute for purposes of comparison, so that most available data is based on the flow approach.

Available studies show a positive relationship between enrolment ratios and per capita income, but there is considerable deviation in the pattern. As shown by Svennilson, the picture differs with the age group concerned. For the 5-14 and 15-19 age groups, the relationship is positive over the ranges of low income and of high income countries, while no perceptible pattern applies over the middle range. Only for the 20-24 age group is there a clear, positive relationship throughout the income range. The study by Harbison and Myers uses a composite enrolment index which shows a similar tendency, although the relationship is better since more weight is given to higher education[1]. Also, it appears from this study that there is no correlation between the level of per capita income and the percentage of income spent on education[2].

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[1] See « Targets for Education in Europe in 1970 », Paper by Ingvar Svennilson in association with Friedrich Edding and Lionel Elvin, *Policy Conference on Economic Growth and Investment in Education*, Washington, 1961, p. 72.

In all, these relationships are not sufficiently stable to lend much comfort to the education planner. Moreover, the tendency for higher education inputs to be associated with higher incomes may reflect the preference pattern, rather than the production function, of high income countries (i.e., investment in consumption as a final good rather than as a means of production), and the low income country may not wish to share this pattern. Sensible education targets, therefore, must be developed by considering the needs of the particular economy and the demands posed by its specific plans. This raises a question of the rate at which the system needs to, or can absorb additional supplies of educated manpower. Arthur Lewis stresses the fact that absorption capacity is limited by the high cost of education in developing countries. To quote :

> « The main limitation on the absorption of the educated in poor countries is their high price, relatively to average national output per head... In consequence, all production... which depends on using educated people is much more expensive, in relation to national income, in poor than in rich countries. The poor countries may need the educated more than the rich, but they can even less afford to pay for or absorb large numbers... In the long run, the situation adjusts itself because the premium for education diminishes as the number of educated increases... As the premium for education falls, the market for the educated may widen enormously. »

And he further notes that

> « to give eight years of primary education to every child would cost at current prices about 0.8 per cent of national income in the USA, 1.7 per cent in Jamaica, 2.8 per cent in Ghana and 4.0 per cent in Nigeria. The main reason for this difference is that, while the average salary of a primary school teacher is less than one and a half times per capita national income in the USA, a primary school teacher gets three times per capita national income in Jamaica, five times in Ghana, and seven times in Nigeria. »[3]

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[1] See Frederick Harbison and Charles A. Myers, *op. cit.*, pp. 36-48.

[2] The authors note that this may be due, in part, to unreliability of the financial data. See Harbison and Myers, *op cit.*, p. 41.

[3] W. A. Lewis, op. cit., p. 37-38.

31

The fact that school teachers' wages are high relative to average wages in the underdeveloped country need not mean that the absorptive capacity, as we understand it, is low. The rate of return on education equals the ratio of (present value of) wages or earnings due to education, to the cost of producing it. The high relative wage of the educated person may merely express the extreme scarcity of the education factor, and hence its ability to command a high return at the given cost of producing it. The high wage might be an indicator of under- rather than over-supply, as demand may prove elastic if only increased supplies could be made available. At the same time, the cost of producing education may be high at early stages of development, relative to that of producing other capital goods, say tractors. If so, the rate of return on education (relative to that on tractors) will not be as high as suggested by the high income stream (wages) accruing to the educated factor alone. The cost of producing education must be lowered before increased investment in education is profitable. This, however, is subject to the previously noted condition that education is highly complementary to other forms of capital formation.

In addition to genuine scarcity, the high salaries demanded for work in positions requiring education reflect conventional factors and the desire to absorb the status previously held by the colonial official. As a result, there is frequently a « minimum wage structure » for high-level work which exceeds the economic return on such work, and prices educated services out of the market. Such rigidities need to be broken down to permit an effective education policy, and to the extent that they are permitted to prevail, appropriate allowance must be made in formulating realistic education targets. A policy which results in a supply of education that cannot be absorbed is obviously inefficient.

A further aspect of the cost problem which deserves special attention is the extent to which the educational effort involves a need for foreign exchange. Capital formation in the developing countries is frequently limited by the fact that capital goods cannot be produced at home, and that the foreign exchange available for acquiring them abroad is scarce. The question arises whether investment in education is more or less capital intensive than are other, and to some extent alternative, forms of capital formation. The answer depends on the level of education. While the exchange component of elementary education cost tends to be relatively low, it rises at the middle level, and for higher education it becomes extremely high. At later stages, this pattern may fit the needs and resources of the country but at the earlier stages, where emphasis is on middle-level education, the match tends to be an unfortunate one and points to the need for an all-out effort in domestic teacher-training.

PRIORITIES

The matter of educational priorities is obviously of vital importance. Unless the right kind of education is provided, setting overall targets has little meaning. Educated people who are unable to find suitable jobs, not only fail to add to the national product but become a source of political instability. Since the cost of various types of education (primary versus secondary versus advanced ; liberal arts versus technical, and so forth) differs greatly, the very setting of overall targets has to be derived from the structural composition of the education supply.

No attempt will be made here to develop this aspect of the problem, neither would the author be competent to do so. Instead, the conclusions of a recent study by Harbison and Myers may be summarized briefly[1]. The authors divide the countries to be studied into three levels, depending on their ranking in composite index of school enrolment. Their policy findings for the lower levels (underdeveloped and partially developed) are as follows :

For the underdeveloped countries, the conclusions are as follows : 1. First priority is to be given to training people who can replace foreign officials in policy-making posts. This being the most urgent social and political requirement, it not only applies to positions in government, but also to major commercial or industrial establishments. 2. The next step is a comprehensive programme of upgrading and training manpower in the major employing establishments. Here government and large enterprises must assume most of the responsibility for lower and middle-level training. 3. Formulation of an appropriate compensation structure for high-level manpower must follow. 4. Regarding the development of formal education, all branches are in urgent need of development, but absolute priority should be given to second-level education, as almost without exception, foreigners will have to be replaced by secondary-school graduates. Over a ten-year period, the average enrolment ratio is to be raised from 2.7 to 12.0, the ratio prevailing among level II countries. Secondary education should be provided free for outstanding students and should prepare for intermediate level positions as well as for university work. 5. A system of higher education will (and, probably, should) be created. 6. Major emphasis in primary education should be on improved quality rather than on expansion of number of schools. 7. Various forms of adult education should be developed.

For the partially developed countries, the recommendations areas follows : 1. Expansion in the form of secondary education is a top priority need. 2. General secondary education should be reoriented to more fundamental subjects, with emphasis on multi-purpose secondary schools. 3. The output of the agricultural, scientific and engineering faculties of the universities should be expanded. Pay and status of scientists and engineers should be raised. 4. Facilities for training sub-professional technical personnel should be provided for in various forms and be geared to actual employment. 5. Primary education should be expanded with all possible speed, but not at the cost of quality. 6. Care should be taken to avoid wasteful capital expenditures on educational buildings. 7. There is urgent need for a comprehensive programme for upgrading manpower already in employment, requiring provision for part-time training and adult education programmes, with special emphasis on responsibility of employment establishments for in-service training.

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[1] Frederick Harbison and Charles A. Myers, *op cit.*, Chapters 4-5.

FINANCING ASPECTS

So far, restraints on education effort have been considered in terms of the country's investment allocation and manpower needs. It remains to take a look at the financial side of the picture. Low-income countries typically lack a capital market and private finance of capital formation is difficult. Thus the public share in capital formation tends to be larger than in developed countries. This holds in particular for education, the financing of which has to be made very largely from public or semi-public sources.

While education finance requires public provision, does this pose a special problem or is it merely a part of the general fiscal problem, limited by the country's overall fiscal capacity ? To the extent that this is the case, the matter is one of tax policy in relation to development, and need not be dealt with in this connection. Suffice it to say that taxable capacity is a scarce commodity in developing countries, as incomes are low and the structure of the economy typically affords few « handles » on which to attach the revenue structure.

The first question to be asked is whether education finance requires the ear-marking of particular revenue sources. The answer is in the negative. While the writer considers ear-marking justified in the case of taxes which represent or are a reasonable substitute for direct charges for specific services rendered (e.g., gasoline taxes as payment for highway use), these conditions are not met with regard to education outlays, especially at the primary and secondary level. Education expenditures, to be sure, may be of particular benefit to families with children as against older people, or to large as against small families, but it would surely be undesirable (on both equity and incentive grounds) to let this be reflected in the financing of education in developing countries. Moreover, the previously noted importance of externality benefits clearly justifies general finance.

At the same time, it is important that this provision for general finance be made on a long-, rather than a short-term basis. For the reasons given above, education outlays are almost entirely in the nature of capital formation, and should be thought of in these terms in budget planning. One of the frequent sins of the double budget approach (current plus capital) is that anything containing cement is in the latter while human investment is in the former category. But whatever the merits or demerits of striking a double balance, it is clearly desirable to plan and budget capital programmes on a longer-term basis. Educational investment should be included therein. While it is true that education outlays are non-lumpy, relative to a steel plant, in the sense that instruction can be expanded in fairly small units, this high degree of divisibility does not hold if the entire process of education, extending from lower to higher levels, is considered. Elementary school graduates are pre-requisite for secondary training, secondary school graduates are needed for higher education, and so forth. The previously noted length of the gestation period is again crucial for education planning. Here, above all, a long-term budget horizon is needed.

As noted above, on-the-job training has to play a vital role, especially at early stages of development. To encourage such training, employer incentives are needed. These may take the form of budgetary contributions to training costs, or of tax incentives.

In discussions of financing higher education in Western countries, increasing attention has been given to modified self-finance through student loans. This may also offer a promising technique for financing higher education in developing nations, especially where the premium on education and hence the income gain accruing to the educated person is very high. Alternatively, the compensation system may take the form of a limited public service period after graduation[1].

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[1] See Frederick Harbison and Charles A. Myers, *op. cit.*

Chapter 3

EXTERNAL AID FOR INVESTMENT EDUCATION IN DEVELOPING COUNTRIES

by

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Education undeniably plays an important role in the modernization process. Lately its contribution to economic progress has come to be widely recognized as direct and perhaps large. Increased attention is being given to the possibility that investment in education may often yield more at the margin than investment in physical capital[1]. Aid for education in less-developed countries is being provided under a number of bilateral programmes, and multilateral assistance is being granted on a limited scale.

This paper gives general comments on the suitability of education as a subject of external aid and discusses criteria for the allocation of aid for education and the forms of aid that may be appropriate. It does not include a review of experience in the field or a description of existing programmes. After some investigation, I concluded that, though a statistical survey of international aid for education would afford interesting background, the assembly of reasonably complete and comparable data was a task beyond my resources.

Although I do not consider it fruitful to engage in an extended discussion on the definition of « education », it is necessary to say a few words about the scope of the topic as I interpret it. This paper will be concerned with education provided through schools, colleges and universities, and formal programmes for adults. The general range of technical assistance is thus excluded, except as it relates to the improvement of formal education, even though an important part of a successful programme of technical assistance is the training of local people, including successors to the foreign experts. Also excluded are press and broadcasting services and other information activities and cultural exchange programmes.

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* Interpretations and opinions are my own and do not purport to reflect the views of the Brookings Institution or of the International Monetary Fund.

[1] See Theodore W. Schultz, *The Economic Value of Education* (New York : Columbia University Press, 1963) ; John Vaizey, *The Economics of Education* (New York : Free Press of Glencoe, Inc., 1962) ; Frederick Harbison and Charles A. Myers, *Education, Manpower and Economic Growth* (New York : McGraw-Hill Book Co., 1964). The Schultz and Vaizey books contain selected bibliographies, and the Harbison-Myers volume includes many footnote references to the rapidly growing literature.

The paper is written from the point of view of an economist and particularly a public finance specialist. My aim is to see whether the economist's way of thinking and his techniques of analysis can contribute anything to the clarification and solution of questions relating to external assistance for education in the less-developed countries[1].

SUITABILITY OF EDUCATION AS A SUBJECT FOR EXTERNAL AID

Is education a more or a less suitable subject for external aid than, say, transportation, irrigation, and electric generation ? What characteristics of education determine its suitability for aid ?

Consumption and Investment Aspects

Despite increased recognition of the economic value of education, aid-giving countries and international organizations have been slow to incorporate large outlays for education in their aid programmes. This hesitancy may be partly due to the difficulty of distinguishing between the consumption and investment components of education. Many consider the productive aspects of education as secondary or incidental, except perhaps in vocational and professional education strictly defined. Both the friends of education and practical men have been loath to regard schooling primarily as a means of increasing earning power, the one group because they feel that to do so would be to set too low a value on education, and the other group because they doubt that schools can impart the skills and knowledge of affairs they have acquired by experience.

No one has succeeded in neatly separating education into its investment and consumption components, and I do not intend to try to do so. The fact is that education is partly consumption and partly investment. People seek education as an end in itself and because they expect it to increase their earning capacity and thus enable them to satisfy their future wants more adequately. Although education has this dual characteristic to an unusual degree, it is not unique in this respect. Good nutrition, public health, and medical care have also been classified as « productive consumption ». Even physical capital sometimes provides direct satisfactions. Steel mills, like universities, are status symbols that have a great appeal to the leaders of newly independent countries.

Even if education were simply a consumer goods industry, external aid for it would be appropriate. Education would be a large industry producing a service with a high income elasticity of demand. Aid-giving countries and international organizations do not consider it inappropriate to assist, for example, agriculture or textile manufacturing, because these industries are devoted mainly to the production of consumer goods. Indeed, a piece of advice that the modernizing countries often hear is that they should concentrate more on the improvement of basic consumer goods industries, postponing the introduction of capital goods industries.

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[1] In preparing the paper, I found particularly helpful an unpublished report of the Atlantic Institute, entitled *Aid to Education in Developing Countries* (draft report, mimeographed, Paris, 1963), a revised version of which is to be published in the autumn of 1964. A useful survey of official and private aid by the United Kingdom appears in a publication of the Overseas Development Institute, Ltd., entitled *British Aid - 3 : Educational Assistance* (London, 1963).

The classification of education as mainly consumption or mainly investment, however, may influence attitudes toward the form of assistance that is suitable. External aid for consumer goods industries tends to be concentrated in the provision of capital equipment and technical assistance rather than in the meeting of current operating costs. If a particular educational programme is classified as consumption, presumably the prevailing attitudes would tend to limit foreign assistance to the provision of buildings and equipment, technical assistance, and teacher training. If, on the other hand, an educational programme is classified as investment, the inhibitions against help in meeting current operating expenses may be lessened. As a practical matter, however, aid for current operations may be limited as much by the difficulty of providing this form of assistance as by reservations about the desirability of aiding consumption (see below).

Domestic Financing

Most education is provided by governments, religious bodies, or other non-profit making organizations. While students or their parents may pay fees, they are hardly ever required to meet the full costs of educational services. Hence the market test of demand cannot be applied in determining how much education should be provided. The absence of a price system, moreover, means that the resources for education cannot be obtained from the proceeds of sale of the services.

These characteristics are common to a wide range of governmental services and activities of non-profit making organizations. Education, however, raises special problems because it yields large and lasting private benefits to students as well as public benefits.

The failure to charge prices that will cover the full cost of production tends to encourage use and to generate pressure for the expansion of educational activity past the point to which it would be carried if it were subject to the ordinary market requirements. But this cannot be regarded as evidence of inefficiency. The organization of education reflects the view that, for economic and other reasons, it would be undesirable to restrict education to those who could and would pay its full costs. Furthermore, enrolment is limited by the rationing of places, and by the substantial costs that students incur in the form of foregone earnings while studying.

An important consequence of the organization of education is that private business capital, either domestic or foreign, cannot be expected to meet a significant part of the requirements for investment in formal education. Nor does private philanthropy appear to be a promising source of large support, relative to needs, in the less-developed countries. While there may be scope for greater reliance on fees, most of the resources will have to be channelled through the public sector.

The weakness of the fiscal systems of most of the developing countries is well known. Usually these countries are handicapped not only by their poverty but also by their inability to make full use of their tax base. To obtain more revenue without resort to measures that are excessively harsh or repressive, the modernizing countries must struggle to reform inadequate tax laws, strengthen administration, and improve taxpayer compliance. Qualified personnel to devise and administer stronger tax systems is scarce, and often the political atmosphere is unfavourable to heavier taxation. Improvement is likely to be slow. Competition for public funds is intense and is growing.

Fiscal weakness is a particular reason why external aid is needed for an activity such as education, which relies heavily on government financing even in the countries that are most firmly attached to private enterprise.

Migration

If education is an investment, it is surely one of the most mobile of all forms of capital. The increased earning capacity created by education is embodied in the person receiving the education, and he takes it with him when he moves. In this respect education contrasts sharply with investment in building and productive equipment, which ordinarily remain in place, even if the original investor withdraws.

Well-educated people, moreover, are more mobile than the uneducated. Persons with advanced professional or technological education, in particular, tend to move from one place to another in their own countries and to go abroad. A problem that has been encountered by many underdeveloped countries is the tendency for some of their best-trained people to settle in Western Europe or North America, attracted there by the better earnings, opportunities and amenities. This kind of mobility may well increase, unless international political and cultural relations deteriorate.

Owing to the mobility of the educated, a country that invests in education risks losing part of the potential returns through emigration. At the same time, the richer countries may reap some of the benefits of the education provided to the citizens of the less-developed countries, as the result of immigration of educated people.

If countries determined their outlays for education and for physical capital on the basis of strict calculations of costs and expected returns, the mobility of educated people would tend to cause investment in professional and technical education te be held below the optimum, relative to investment in physical capital, from the standpoint of world welfare. Each country would tend to hold down its investment in education to allow for the risk of emigration. Generally, the expectation of an inflow of educated persons would not give the receiving country a selfish reason for increasing its own outlays for education further, relative to physical capital, than would be advantageous if human capital and physical capital were equally mobile. On the contrary, the expectation of an inflow might cause a country to adjust downward its expenditure for education[1].

Geographic inequalities of income and wealth will be increased by the migration of educated people if the rich countries tend to attract a net inflow from the poor countries. I do not know whether this is now occurring, but suggest that a study of such flows would be interesting.

The situation I have sketched is characterized by what public finance economists call external benefits or spillover effects. The possible adverse influence on economic efficiency and the distribution of income are well recognized, and much thought has been given to possible correctives. Externalities or spillovers are important with respect to education within countries as well as between countries.

An attempt to deal with spillovers by restricting the emigration of educated persons would impose intolerable restrictions on freedom and would imply cultural losses. Another solution, which may be feasible within countries but which has little application on the international scene, is to minimize "spillovers" by centralizing governmental decision-making. A third possibility is for the beneficiaries of spillovers to compensate or assist the losers. The attractiveness of this solution is enhanced when the beneficiaries have higher incomes than the losers, as may be true in connection with education. Where migration is heavy, as it sometimes is within countries, it may be possible to show the beneficiaries that their selfinterest will be served by aiding education in the regions from which the migrants come. Between countries, however, it is far harder to make a convincing demonstration on this basis. The richer countries may nevertheless be moved to aid the poorer ones by larger considerations of national policy or by altruism.

Before leaving the subject of spillovers, I should say that I do not believe that educational expenditures are, in fact, determined on the basis of cold economic calculations of the kind described above. Officials and citizens are moved more by generosity and national pride than is recognized by the theory. But I do think that the tendencies visualized by the theory already exist to some degree and are likely to be strengthened by the adoption of the practice of planning for education to serve manpower requirements. In such an environment, recognition of spillovers may come to be accepted as an argument in favour of external aid to education in the less-developed countries.

Domestic and External Resources

External aid for education is often regarded as less urgent, and less feasible, than external aid for other forms of investment because education uses relatively less imported goods and services. This is more true of primary and secondary education than of advanced education. At the lower levels, language barriers make it hard to use foreign teachers, and it is not practicable to send pupils abroad to study. These limitations are less serious with respect to university and advanced technical education ; also more imported equipment, books, and supplies are likely to be needed by advanced students.

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[1] I am indebted to Burton A. Weisbrod for suggestions on this subject. For an analysis, including quantitative estimates for one local school district in the United States, see his monograph, *External Benefits of Public Education, an Economic Analysis* (Princeton, N.J. : Industrial Relations Section, Princeton University, 1964).

This approach, however, is too narrow in my opinion. External assistance, by enabling a country to use more goods and services than it currently produces, allows an increase in development outlays. While the assistance must take the form of additional goods and services from abroad, the flow need not consist exclusively of items that are directly used in the development activities. To argue that the direct foreign exchange costs are a sufficient measure of need for external assistance is to imply that additional expenditures for education would not accentuate the shortage of domestic resources, which is clearly not true in a poor country.

Arrangements that allow a prudent government to increase its expenditures for education can properly be regarded as external assistance for education, even though they do not assure an increased flow from abroad of teachers, textbooks, materials for school buildings, and other items directly used in education.

General aid can be used indirectly to pay for whatever foreign goods and services are demanded as a result of the increased draft on resources attributable to local-currency expenditures for education. Additional imports can replace the output that would have been produced by the domestic resources had they not been drawn into education. For example, if a country constructs more school buildings, using local materials and labour, it may divert resources from the construction of bridges and port facilities, and imports may make good the shortages thus created.

General foreign assistance can be used to satisfy the demand for consumption goods that will be exercised by teachers and others who are employed in education, thus releasing domestic resources which would otherwise be required for this purpose. It is sometimes suggested that no additional foreign resources are required in order to put to work local people who otherwise would have been unemployed or underemployed. This is incorrect, however. The persons who become employed, or who go to work in a job that uses their skills to a higher level, obtain additional income and, of course, increase their expenditures. An increased flow of consumption goods must be supplied by imports or by additional home production, if incentives are to be protected and inflation avoided.

Countries in which the monetized sector of the economy is fairly large will ordinarily not need to make elaborate plans regarding the substitution of imports for home production and the use of additional imports. A market need not be highly developed in order to take care of that.

Far more significant than the exact form of external assistance is the question of how the aid-giving countries and institutions assess need, and what conditions they attach to their assistance. These remarks are not intended to deny that there may be practical value in a rule that relates the amount of external assistance to the import content of a programme. A rule of this kind may have the merit of putting pressure on the recipient countries to exert themselves in mobilizing their own resources. Such a rule or policy, however, is a matter of tactics and not of basic economics.

Specific Nature of Resources

While I think it is useful to stress the substitutability of economic resources, it cannot be denied that specific resources are needed for education. For example, the achievement of the educational aspirations of Asia, Africa, and Latin America would require an enormous increase in the number of teachers. Teachers are in short supply almost everywhere, and it takes a long time to complete the formal education required by a fully qualified teacher. Is this the bottleneck that will limit the expansion of education regardless of the amount of external assistance ?

More foreign teachers can be provided where language barriers are not insuperable. While the limited use of foreign teachers affords a highly desirable cultural interchange, problems are likely to arise when the number of foreigners is large. And costs are heavy. The United States Peace Corps, for example, estimates the average cost for each volunteer at $ 8,560 per year. This figure includes compensation and other benefits for the volunteers, transportation, miscellaneous project costs, and costs of training and administration, with the non-recurrent costs pro-rated over a two-year term of service[1]. This is a general average ; costs may be somewhat lower for teachers than for other volunteers. Since Peace Corps volunteers are attracted largely by non-economic considerations, costs probably would be higher for an organization that recruited in the United States mainly on the basis of economic incentives. While costs may be lower in other countries, they are high relative to per capita income in the less-developed countries and relative to the amount of external assistance that seems likely to be forthcoming.

Primary reliance will have to be placed on local teachers, at least at the elementary and secondary levels. While teacher shortages are no doubt acute in many countries, the shortages cannot be evaluated apart from prevailing salaries. In many cases an improvement in the relative pay of teachers may help attract more persons to the profession. It is reasonable to pay more to teachers in remote or unattractive areas than to those in places offering more amenities ; however, the practice often seems to be the opposite. Sometimes students who expected to enter other occupations can be attracted to teaching, thereby cutting down the length of time it takes to increase the supply.

The determination of minimum qualifications for teachers involves economic questions relating to the broad issue of quality versus quantity. In view of the shortage of resources, the less-developed countries cannot immediately satisfy their aspirations with respect to either quality or quantity. For some time to come they will not have as many teachers as they need, and the average level of qualifications will be lower than would be desirable.

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[1] *Peace Corps Act Amendments*, Hearing before the Committee on Foreign Relations, United States Senate, 88th Congress, 2nd Session (February 24, 1964), pp. 38-41.

I believe that most economists who have made no special study of the subject would tend to stress the relativity of quality in this connection and would expect a sensible balance to involve compromises on both minimum qualifications for teachers and on numbers. Further consideration, without contradicting this conclusion, would point to the danger of wasting buildings, equipment, and pupils' time if teacher qualifications were too much diluted. Well-informed observers appear to believe that the risk of standards that are too low is greater than that of excessively high standards. Professors Harbison and Myers, for example, conclude : « In general, political and social pressures make for emphasis on quantity, whereas the achievement of rapid economic growth makes it imperative to emphasize the quality of high-level manpower required for development[1] ». While I do not question this conclusion, I think that the danger of excessively high or inappropriate standards, adopted in imitation of more affluent countries, should not be overlooked.

Since capital equipment can be imported more readily than teachers, consideration should be given to the possibility of economizing on teacher services by greater use of educational aids such as teaching machines, films, and broadcasting. It may also be feasible to transfer to other personnel some of the clerical and miscellaneous duties which are commonly assigned to teachers.

ALLOCATION OF ASSISTANCE AND FORMS OF ASSISTANCE

Allocation Among Countries

It is hard to lay down principles for the allocation among countries of external assistance for education. One would like to be sure that the assistance is effectively used and that the recipient countries are making reasonable efforts to meet their own needs. But these objectives are too general to have much content.

The usual tests of economic efficiency are not applicable. Suppose, for the sake of discussion, that it were possible to show that the marginal return on additional investment in education were substantially higher, in terms of increased national product, in country A than in country B. It would not follow that a foreign government or international organization should give aid to A rather than B until A's investment was carried to the point at which the marginal rate of return was no higher in A than in B. The existence of foreign aid is evidence of dissatisfaction with the resource flows attracted by opportunities for private gain, and it is unlikely that economic criteria will be regarded as sufficient, even when broadly interpreted.

There is, nevertheless, a real question of strategy in deciding how much weight to give to capacity to make efficient use of assistance, on the one hand, and urgency of need on the other hand. Neither of these considerations can be ignored, and they are often conflicting.

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[1] Harbison and Myers, *Education, Manpower, and Economic Growth*, p. 174.

The ability to make effective use of assistance has been called absorptive capacity, an idea that has great appeal despite its vagueness. In its most general sense, absorptive capacity seems to refer to the desirability of maintaining some kind of rough balance among the various constituents of a modernization programme. If a particular form of aid is pushed too far, the gain at the margin may fall off rapidly and reach zero or even a negative figure. This is more true of highly specific assistance than of general assistance, and clearly there is also a time dimension.

Aid for education may be thought of as one means of increasing a country's capacity to absorb other forms of assistance. But, of course, there are also limits on capacity to absorb educational assistance. These limits may be due partly to highly specific shortages of complementary resources that cannot be met by external assistance. They are also due to limitations on job opportunities for educated people, social traditions that unduly limit the kind of work considered suitable for the educated, and wage scales that set much higher premiums on education in the less-developed countries than in the economically advanced countries.

The best hope for raising absorptive capacity is to press ahead with general development and at the same time to push education at a faster rate than is compatible with the absorption of all the educated people at the relatively high wages and in the socially select jobs that have traditionally been considered appropriate. This is certain to cause frustration and political discontent owing to discrepancies between the actual status and the expectations of educated people[1], but I do not see how this kind of tension can be avoided in a modernizing country.

In judging the adequacy of a country's own efforts, one possibility is to apply a rule of thumb with respect to the ratio of educational expenditures to GNP. A country might be considered eligible for external assistance only if it is devoting at least a specified percentage of GNP to the support of education. While a rule of this kind has the appeal of apparent simplicity, I do not think that it will bear critical examination. Expenditures equal to a given percentage of GNP are more burdensome to a country with a very low income level than to a country with a higher income. Differences in relative prices and wages and in the age distribution of the population also affect the adequacy of a particular ratio as a measure of effort or need. A serious practical difficulty is the absence of national income estimates in many countries and their poor quality in many others.

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[1] W. Arthur Lewis, « Priorities for Educational Expansion » in OECD *Policy Conference on Economic Growth and Investment in Education* (1961), Part III, pp. 36-38, and « Education and Economic Development », UNESCO *International Social Science Journal*, Vol. XIV, No. 4, 1962, pp. 686-688.

Allocation of Assistance Within Countries

In the allocation of external assistance between education and other items and among alternative educational projects, economic calculations may be more helpful than they are in respect to decisions concerning the allocation of assistance among countries. In principle, estimates of costs and benefits may be important data in deciding between aid for education and aid for, say, irrigation or flood control in a particular country. Similar calculations may help in choosing between, say, agricultural colleges and general secondary schools and in determining the optimum scale of various educational projects.

Relatively narrow technical questions can be analyzed by comparing the costs of alternative means of producing specific outputs, such as a year of secondary schooling or the training of an agricultural engineer. For broader comparisons, however, it is necessary to try to develop comparable general measures of costs and outputs. I know of no better way to do this than to state both costs and outputs, including selected imputed items, in money terms. In order to obtain a complete and useful statement, it is necessary to assign social accounting values to items such as the time of students and gains in national product due to education[1].

The broad social and political gains from education probably cannot be explicitly included in the calculations. An allowance can be made by arbitrarily assigning a fraction of the costs to these objectives or by agreeing to accept a lower rate of return from an educational investment than from an investment whose yield is more fully reflected in national income as usually estimated.

Many people are repelled by the idea of trying to subject even a part of the benefits of education to the measuring rod of money. They would regard such an attempt as confirmation of Edmund Burke's gloomy verdict, pronounced at the end of the eighteenth century : « The age of chivalry is gone ; that of sophisters, economists, and calculators has succeeded ». I agree that monterary measures of educational benefits may be shocking on first consideration, but I do not see how one can escape the logic of the proposition that rational decision-making is facilitated by explicit comparisons of costs and returns. The benefits of education must be appraised, explicitly or implicitly, whenever an individual or a government makes a decision to spend for education rather than something else. Not even the staunchest advocate of education will contend that it always has priority over other uses of limited resources.

I do not mean to imply that I consider it practicable to present a grand set of equations showing the marginal yields of all forms of educational expenditure and comparing them with the yields of other investments. Admittedly, little progress has been made in the measurement of returns on investment in education, even in countries that are relatively well-supplied with the necessary statistical data. Much more work will be needed if better estimates are to be developed. While the subject is diffcult and precision is hardly attainable, I think that the difference in the difficulty of estimating the economic contribution of education and other developmental activities is sometimes exaggerated. Part of the difficulty is due to the novelty of the idea of trying to measure the economic returns from expenditures for education. The assumptions underlying estimates of returns on conventional forms of investment are more familiar but not always more valid than those involved in attempts to measure returns from education[1].

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[1] It may also be advisable to employ accounting or « shadow » prices in measuring the cost of items for which prevailing prices are considered inadequate indicators of social importance. See Jan Tinbergen, *The Design of Development*, Baltimore, Md. : Johns Hopkins Press for Economic Development Institute, International Bank for Reconstruction and Development, 1958, pp. 39-41, 76-78.

In my judgment, research on the broad problems of measurement should be carried forward simultaneously with more detailed studies of costs and returns from different educational techniques. The objective of the latter studies would be to evolve better criteria for choice among projects and better measures of efficiency. Particular subjects for study include the relation between unit costs and size of enrolment, the comparative costs of local and foreign study, and the cost implications of decisions respecting the location of educational institutions.

Relation to Development Plans

An obvious guide in the allocation of external aid for education is a comprehensive development plan including as one of its features detailed projections of manpower requirements. I do not think, however, that we are yet in a position to insist on such a plan as a prerequisite for external aid. To do so would involve the risk of encouraging the preparation of unrealistic plans having little foundation and only a remote relation to the country's desires and capacity. Given a general formulation of economic objectives, it will often be possible to foresee manpower requirements accurately enough to determine whether a particular educational project or activity is promising.

If manpower projections are to be useful, it is essential that they be frequently revised in the light of technological changes and changes in prices and wages. Manpower projections tend to be based on a price and wage structure that reflect conditions either in the underdeveloped countries at the time the plan is drawn up, or, more likely, in advanced countries at that time. With the changes in relative prices and wages to be expected as economic development goes forward, manpower demands will alter.

In deciding how much formal education is needed, it is a mistake to follow too closely the educational standards of more advanced countries. In the United States, for example, it seems that employers have come to use high school graduation as a test of character or personality as much as an indication of formal education. The completion of high school is commonly required, therefore, for jobs which involve little technical or clerical skill and only steady work habits

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[1] See Richard Goode, « Adding to the Stock of Physical and Human Capital », *American Economic Review*, Vol. XLIX, No. 2, May, 1959, p. 148.

46

and reasonable social adaptability. This requirement may be questionable in the United States ; a similar requirement would be foolish in another setting.

Vocational and General Education

Those who wish to use education as a means of economic advancement understandably tend to stress vocational, scientific and applied studies rather than general education. In many underdeveloped countries this emphasis is a wholesome corrective for a tendency to copy classical and literary curricula of other countries with little regard to local conditions.

As an economist, I sympathize with the desire to re-orient education along more practical lines, but sense a danger that this may be overdone. Pre-occupation with vocational education narrowly conceived places a great premium on accuracy of forecasting manpower requirements. It runs the risk of turning out students with skills that are already obsolete. Vocational skills can often be acquired more easily on the job than in school.

Functions to be Assisted

Educational functions that might receive external assistance include planning, construction and equipment, teacher training, and current operations.

Since the development of a consistent plan is strategically important for educational progress, the assisting countries and agencies would like to participate in the planning process by providing technical assistance and advice. In this way they hope to have the maximum impact and to ensure that their further assistance will be put to good use. The recipient countries, for their part, often welcome advice but are understandably jealous of their national independence and desire to make their own decisions. Foreign experts may arrive with many unexamined assumptions and sometimes try to transplant practices that are good in their own countries but poorly adapted to conditions in the less-developed countries. Clearly, the provision of technical assistance for general educational planning is a delicate relationship calling for tact and wisdom on the part of both the giver and the receiver of assistance.

Generally, assistance in technological matters, such as the design and construction of school buildings, is a less sensitive subject than assistance in general planning. Even this form of technical assistance, however, is not without risk. Architects and engineers have been known to draw up plans that are quite unsuited to local climatic conditions, materials, and economic capacity. The pride of the recipient countries may lead them to insist on excessively high construction standards. When external assistance for construction is given under favourable auspices, it may afford a side benefit in the form of adapting designs to local conditions and a demonstration of what can be done in this respect. The International Development Agency (IDA), an affiliate of the World Bank, provided a grant for the study of school building design in connection with its loan to Tunisia for the financing of the construction of secondary schools. Foreign experts were engaged to study the problem[1].

The establishment of institutions for teacher training in the less-developed countries and the construction and equipment of buildings are necessary to establish an educational plan that will ultimately allow a country to become self-supporting in the educational field. Assistance with respect to construction is the easier of the two because the resources needed are less specialized.

There is understandable reluctance to contribute to routine current costs, but special kinds of aid in meeting operating costs are recognized as appropriate. For example, it may be considered appropriate to help cover special costs arising in a limited time period owing to the introduction of new educational techniques or programmes or temporary teacher shortages. Facilities for foreign study are a form of aid that merits separate comment.

Study Abroad

A large part of external assistance to education takes the form of scholarships and other facilities allowing students from the less-developed countries to study at foreign universities or other institutions. These opportunities have made a great contribution to the training of the leaders in the less-developed countries and have enriched the cultural and intellectual life of the host countries.

Especially for small countries, foreign study is cheaper than local university education. But it has disadvantages. The less-developed country loses the incidental benefits associated with the existence of a local university, particularly the opportunity of drawing on the university faculty for research and advice on local problems. Students who go abroad may not come home or, if they do, may be dissatisfied when they return[2].

From the point of view of the assisting country, provisions for study by foreign students are an attractive form of aid. Allocation and administration of this form of aid are easier, or seem to be easier, than the provision of other forms of assistance. The aid-giving country may believe that the foreign students will become more sympathetic with its political and cultural position. There is, however, a tendency to underestimate the cost of providing for foreign students. Commonly, no close calculations are made of the extra cost of providing for the foreign students, and the assistance may be concealed in the budgets of the universities and other institutions in the aid-giving countries.

Loans and Grants

The bulk of educational assistance is in the form of grants, but some loans are made for this purpose. IDA has concluded three loans for educational purposes on the easy terms which characterize the loans of this institution[1]. The World Bank (IBRD) is, in principle, ready to make loans for education on its regular terms to countries whose conditions make them eligible for IBRD credit rather than IDA credit[2]. In connection with its shift toward more loans as distinguished from grants, the United States Agency for International Development in the fiscal year ended June 30, 1963, made loans for educational purposes to the amount of $ 13.3 million, about 16 per cent of the total aid for education provided by the agency[3]. (Other United States aid, provided by the Department of State, Peace Corps, and other agencies, is in the form of grants or direct United States expenditures).

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[1] International Bank for Reconstruction and Development, *Eighteenth Annual Report, 1962-63*, Washington, p. 9 ; International Development Association, press release 62/18, September 17, 1962.

[2] Lewis, *International Social Science Journal*, Vol. XIV, pp. 695-697.

If educational investment is indeed productive, it might appear to be as appropriate to finance education by foreign loans as to finance any other form of investment in this way. Although loans are appropriate in many cases, I think it would go too far to consider education as suitable a subject for international lending as are many other investments. As pointed out above, educational services are ordinarily not sold at a price covering their full costs. Hence the productivity of the services will not automatically provide the government with the means of servicing a loan.

The additional income attributable to education will accrue to individuals, and usually the government will participate in this income only to the extent of the additional taxes that it collects as a result of the increase in income. Since the marginal ratio of taxes to national income is always far less than 1, a highly productive investment in education may not provide financial resources for the government commensurate with its cost. Suppose, for example, that an educational investment will yield an annual increase in the net national product equal to 20 per cent of its cost. If the marginal tax rate is equal to 15 to 20 per cent of the net national product — a fairly high figure for an underdeveloped country — the state will automatically obtain additional annual revenue equal to only 3 to 4 per cent of the cost of the educational project, which is inadequate to service an ordinary loan.

Any additional tax receipts, moreover, will nearly always be in local currency, and the servicing of a foreign-currency loan will involve a special transfer problem. While there may be a tendency to exaggerate the problem, it is genuine, and may be particularly serious when the borrowing country's exchange rate is out of line with its equilibrium value.

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[1] The IDA loans include *(a)* a $ 5 million credit to Tunisia for secondary and technical school construction, announced September 17, 1962 ; *(b)* a $ 4.6 million credit to Tanganyika to help enlarge the secondary school system, announced December 20, 1963 ; and *(c)* two credits totaling $ 13.0 million to Pakistan for agricultural and technical educational facilities and teacher training, announced March 25, 1964.

[2] Annual address by George D. Woods, President of the Bank and its affiliates, in *Summary Proceedings*, 1963, Meeting of the Boards of Governors, International Bank for Reconstruction and Development and International Development Association, Washington, p. 12.

[3] United States Agency for International Development, *Operations Report*, Data as of June 30, 1963, p. 44.

It would be wrong to lay down the principle that education should never be financed by external borrowing. The servicing of foreign loans for other forms of government investment raises much the same problem ; nevertheless, such loans are by no means unknown. Productivity alone, however, is not a sufficient criterion for foreign borrowing for education.

SUMMARY OF CONCLUSIONS

External aid for education in less-developed countries can contribute significantly to modernization by helping provide the skills and knowledge that form an important though intangible part of the capital stock. External aid can also be justified as a means of expanding capacity to supply a service that can be expected to represent an increasing proportion of consumption as income grows.

The necessity of financing a large part of educational expenditure by taxation rather than fees, combined with the fiscal weakness of most underdeveloped countries, indicates that official assistance may be more needed for education than for many other kinds of investment. The mobility of educated people, particularly those with advanced technical or professional education, is another consideration that seems to suggest the desirability of special attention to external aid.

The direct import or foreign-exchange content of educational expenditures is not a satisfactory index of need for external aid or of capacity to absorb it. External assistance may be used either directly, to pay for imported goods and services employed in education, or indirectly, to replace the output of domestic resources diverted to education. In either case, its economic function is to allow the country to consume and invest more than its current output. While opportunities for substitution are greater than many comments imply, it is true that the rate of expansion of education is limited by the scarcity of teachers and other specific resources.

A country's capacity to make good use of aid and the adequacy of its own efforts have economic aspects ; however, there are no economic formulas for allocating education aid among countries. In principle, economic calculations may be useful in apportioning aid between education and other development purposes in a particular country and in choosing among alternative educational projects. But much remains to be done before estimates of costs and economic benefits of education attain the completeness and reliability needed as a basis for better decision-making.

Although a comprehensive development plan, including projections of manpower requirements, can be highly useful in the allocation of aid for education, the insistence on such a plan as a formal prerequisite of external aid may stimulate the formulation of unrealistic plans. The difficulty of accurate long range projections is a reason for caution in emphasizing vocational and highly specialized technical education.

External assistance is likely to make its greatest and most lasting contribution when it is directed toward enabling the recipient countries to meet their needs with their own resources. In this respect assistance in planning and innovation seem especially promising. Facilities for study abroad fill an important part of the need for advanced education but lack certain side benefits associated with the improvement of local facilities.

Both loans and grants are suitable forms of external assistance. However, the servicing of foreign loans for education may be more difficult than the servicing of loans for many other productive purposes.

B

STATISTICAL ASPECTS

4

FINANCIAL ASPECTS OF THE EDUCATIONAL EXPANSION IN DEVELOPING REGIONS : SOME QUANTITATIVE ESTIMATES

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5

EDUCATIONAL EXPENDITURE IN DEVELOPING AREAS : SOME STATISTICAL ASPECTS

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Chapter 4

FINANCIAL ASPECTS OF THE EDUCATIONAL EXPANSION IN DEVELOPING REGIONS: SOME QUANTITATIVE ESTIMATES

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1. INTRODUCTION

This report will discuss some financial implications of the expansion of the educational systems in the developing regions. Quantitative estimates will be made concerning the future levels of educational expenditure. These estimates will be compared with the estimated capacity to finance the expansion from domestic resources.

The increased expenditure implied by an increasing number of students is calculated from estimates of future school enrolments and standard cost figures. The latter are discussed in Section 4. Estimates of future numbers of second and third level students in the developing regions will be based on statistically tested relationships describing the dependency of manpower requirements and student numbers on such economic variables as the national income and income per head.

The manpower and enrolment figures derived in this report should not be considered as forecasts, but as requirement or target figures to be realized if certain levels of production have to be reached.

The estimates of the manpower and enrolment requirements will be derived from the preliminary results of statistical analyses carried out by the Netherlands Economic Institute. These analyses are concentrated on the statistical testing and measurement of the following two equations:

$$(1.2.1) \quad N^i = \alpha_0 \, Y^{\alpha_1} \left(\frac{Y}{P}\right)^{\alpha_2} \quad \text{and}$$

$$(1.2.2) \quad n^i = \beta_0 \, Y^{\beta_1} \left(\frac{Y}{P}\right)^{\beta_2}$$

where N^i represents the labour stock educated at the i th level,
n^i the number of students (pupils) at the i th level,
Y the national income and
P the population.

The choice of Y as an independent variable in equation (1.2.1.) was based on the assumption of a relation between a factor of production on the one hand and total production on the other. Income per head was added as a second basic factor to indicate that the level of development influences the demand for manpower of a certain level of education. There are two possibilities here : per capita income may have a positive influence (α_2 positive) or a negative influence (α_2 negative). The first might be caused by the fact that a richer country can afford to have more students ; the opposite might result from increased productivity of the manpower stocks.

As the demand for students is derived from the demand for manpower the arguments concerning the stocks would hold for the student numbers. For this reason equation (1.2.2.) has been given the same general shape as (1.2.1).

2. MANPOWER ESTIMATES FOR 1975

2.1. *The method*

This chapter concerns the estimation of the labour force with secondary and with higher education in 1975 in the developing regions, the first stage of an indirect way to estimate enrolments in 1975. Use will be made of the result of the statistical tests of equation (1.2.1). The second stage of this method is discussed in section 3.1 where the estimation of student numbers from the relevant manpower stocks is described. An illustration is given there for the third level.

To derive estimates of the third and second-level manpower stocks in 1975 from equation (1.2.1) of section 1.2, assumptions must be made regarding the levels of the independent variables : the national incomes (Y) and the national incomes per head Y/P in 1975 for the various regions. It has been assumed that each country's national income will grow by five per cent annually, starting from the figures for 1960. This growth rate has been chosen in accordance with the average target figure for the developing countries accepted in the programme of the United Nations Development Decade. It may be considered as a modest target figure when taking account of the existing income gap. Population figures have been taken from Professor P.N. Rosenstein-Rodan's study « International Aid for Underdeveloped Countries. »[1]

2.2. *The results*

Empirical testing of equation (1.2.1) on the basis of observations for 23 developing and developed countries resulted in the following regression equation :

$$(2.2.1) \quad \log N^3 = 0.716 + 1.202 \log (Y \times 10^{-6}) - 0.164 \log (\frac{Y}{P})$$

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[1] The Review of Economics and Statistics, Vol. XLIII, May 1961, Number 2.

Or, in a different form :

$$(2.2.1a) \quad N^3 = 5.20 \ (Y \times 10^{-6})^{1.202} \ (\frac{Y}{P})^{-0.164}, \ (\bar{R}^2 = 0.845)$$

where N^3 is the third-level educated manpower stock

Y is the real national income in US dollars of 1957

$\frac{Y}{P}$ is the real national income per capita in US dollars of 1957.

It is interesting to note that the elasticity of N^3 with respect to $\frac{Y}{P}$ is negative (— 0.16). Apparently, the forces making for a positive relationship are more than counterbalanced by the increased productivity of the third-level manpower stock as income per head grows (see section 1.2). The same can be said differently by noting that the elasticity of N^3 with respect to P is positive : + 0.16. This interpretation also shows an approximate proportional dependency of N^3 with respect to Y (the elasticity being 1.20 — 0.16 = 1.04).

The estimates of the second-level manpower stocks will be based on the following formula (tested for 21 developing and developed countries) :

$$(2.2.2) \quad \log N^2 = 2.214 + 1.314 \log (Y \times 10^{-6}) - 0.655 \log (\frac{Y}{P}),$$

which can be rewritten as

$$(2.2.2a) \quad N^2 = 163.67 \ (Y \times 10^{-6})^{1.314} \ (\frac{Y}{P})^{-0.655} \qquad (\bar{R}^2 = 0.857)$$

Comparison of equations (2.2.1) and (2.2.2) shows that the negative elasticity relating N^2 to $\frac{Y}{P}$ is much more pronounced than the one relating N^3 to $\frac{Y}{P}$. The regression coefficients of the variable $\log (Y \times 10^{-6})$ are of comparable magnitude, implying a less than proportional elasticity of N^2 with respect to Y.

After substitution of the values of Y and $\frac{Y}{P}$ in 1975, based on the assumptions made in section 2.1, equations (2.2.1) and (2.2.2), the following results were obtained (see columns 2 and 3 of Table 2.2) :

TABLE 2.2. ESTIMATED SECONDARY AND HIGHER-LEVEL MANPOWER STOCKS IN 1975 BY MAIN REGIONS

In thousands.

REGION 1	N2 2	N3 3
Africa*	4,900	960
Latin America**	8,200	1,720
Asia***	14,000	2,380
India	21,900	2,610
Total	49,000	7,670

* Excluding the Union of South Africa.
** Middle and South America.
*** Excluding mainland China, India and Japan ; including the countries of the Middle East.

3. TWO WAYS OF ESTIMATING THE NUMBERS OF STUDENTS IN 1975

3.1. *Indirect estimation*

As has been set out already in Section 2.1, the manpower estimates of Chapter 2 will serve as a starting point for the estimation of enrolments in 1975. This derivation can be made as follows. (For matters of convenience the description of the technique has been given for third level education. It holds, after the amendments specified below, for lower levels as well.)

Let us suppose that an estimate can be made of the third-level manpower stock in 1975, for example by using (2.2.1). The difference between this stock figure and the actual manpower stock in a recent basis year represents of course the total « net increase » in the third-level labour force that should take place during the intermediate time period. This increase is net of those who drop out because of death or retirement and have to be replaced by graduating students. Together they add up to the « gross increase » or the cumulated sum of students to be graduated by 1975 in order to reach the third-level manpower stock estimated for that year.

If we assume that the annual numbers of graduating students grow with a constant percentage and if we know the number of students who take their degree in the base year, then their constant growth rate can be calculated[1].

Finally, supposing that the student-graduate ratios remain constant over time, the growth rate of the numbers of graduating students equals the growth rate of the enrolment figures. So, if enrolment in the base year is known, the number of third-level students required in 1975 follows easily.

The procedure is even more complicated for lower levels of schooling where a correction must be made for those who continue their study at a higher level. They will ultimately be included in the labour force at the level corresponding with their highest level diploma. In order to avoid double counting for the present purpose they should not form part of the numbers of graduating students at the intermediate levels.

This rather elaborate estimation method has the advantage that starting from the present, possibly unbalanced, situation we estimate a balanced situation in the future. This property makes it very appropriate for the estimation of target figures.

The figures in column 3 have been estimated on the basis of data for the third-level manpower stocks of individual countries. With the exception of Africa, these countries constituted at least 50 per cent of the population of the relevant region. The reader will note that even with every care taken, the estimates must still be

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[1] With a constant growth rate the annual numbers of graduating students follow a geometrical series, the sum of which can be written as

$$S_n = a \frac{r^n - 1}{r - 1}$$

Since in this equation we know S_n (the « gross increase »), a (the first term of the series) and n (the number of years), the growth rate r can be derived.

Table 3.1.1. THE ESTIMATED GROSS INCREASES OF THE THIRD-LEVEL MANPOWER STOCKS FROM 1960 TILL 1975

In thousands.

REGION*	N_3 IN 1975	N_3 IN 1960	NET INCREASE	REPLACE-MENT	GROSS INCREASE
1	2	3	4	5	6
Africa	960	160	800	50	850
Latin America	1,720	650	1,070	200	1,270
Asia	2,380	920	1,460	280	1,740
India	2,610	1,200	1,410	360	1,770
Total	7,670	2,930	4,740	890	5,630

* For description of regions see Table 2.2.

considered as rather rough. On the other hand, as the stocks in 1960 are small in comparison with the stocks in 1975 (especially in Africa, the region with perhaps the least reliable estimate) the net increases are not very sensitive to an error in the estimated stock in 1960.

Columns 4 and 6 have been calculated in the way set out above. Drop-outs were estimated by assuming an annual replacement rate of 2 per cent of the stocks in 1960. This rather low percentage seems justifiable as the higher-educated manpower will consist mainly of relatively young people.

Since the replacements have a positive influence and the stocks in 1960 a negative influence in the calculations, their constant proportion of 30 per cent implies that erroneous estimates of the latter figures will have a still smaller effect on the gross increases.

Table 3.1.2. INDIRECTLY ESTIMATED ENROLMENT IN INSTITUTIONS OF HIGHER EDUCATION IN 1975

In thousands.

REGION	GROSS INCREASE	GRADUATING STUDENTS IN '60	STUDENTS IN '60	STUDENTS IN '75	ANNUAL GROWTH RATE IN PER CENT
1	2	3	4	5	6
Africa	850	20	143	955	13.5
Latin America	1,270	55	376	900	6
Asia	1,740	100	829	1,250	2.3
India	1,770	110	913	1,060	1
Total	5,630	285	2,261	4,165	4

The annual growth rates range from fairly high (Africa) to very low (India). The reasons will be evident : apparently the present African third-level stock is very low, whereas the present Indian stock must be rather high. These conclusions are consistent with observations. The reader will not be surprised to see that the estimates for Africa and India mentioned in Table 3.1.2 differ very much from other predictions which did not take into account the present level of manpower stocks.

3.2. *Direct estimation*

This section will estimate enrolments directly from equation (1.2.2). The general form of this equation does not differ from (1.2.1) i.e. the same independent variables and the same type of function have been chosen. The statistical investigations reveal that even the regression coefficients do not differ very much. For example, we see that the regression coefficients of log $(Y \times 10^{-6})$ in (2.2.1), (2.2.2), (3.2.1) and (3.2.2) are of the same order of magnitude, and the same holds, though to a smaller degree, for the coefficients going with log $(\frac{Y}{P})$.

$$\text{(3.2.1.)} \quad \log n^3 = 0.198 + 1.337 \log (Y \times 10^{-6}) - 0.325 \log (\frac{Y}{P})$$

or, as a power function.

$$\text{(3.2.1a)} \quad n^3 = 1.578\ (Y \times 10^{-6})^{1.337}\ (\frac{Y}{P}) - 0.325 \qquad (\overline{R}^2 = 0.719)$$

$$\text{(3.2.2.)} \quad \log n^2 = 2.208 + 1.151 \log (Y \times 10^{-6}) - 0.399 \log (\frac{Y}{P})$$

$$\text{(3.2.2.a)} \quad n^2 = 161.4\ (Y \times 10^{-6})^{1.151}\ (\frac{Y}{P}) - 0.399 \qquad (\overline{R}^2 = 0.852)$$

Both equations (3.2.1) and (3.2.2) were based on data for 27 countries. With the assumptions regarding the levels of the real national incomes and the real incomes per capita prevailing in the 4 regions indicated in section 1.2 and using (3.2.1) and (3.2.2) the following estimates were obtained :

TABLE 3.2.1. THE ESTIMATED ENROLMENTS IN INSTITUTIONS OF HIGHER AND SECONDARY EDUCATION IN 1975 (DIRECT ESTIMATES)

In thousands.

REGION	THIRD-LEVEL STUDENTS	SECOND-LEVEL STUDENTS
Africa	420	4,480
Latin America	750	7,930
Asia	1,120	12,400
India	1,600	12,700
Total	3,890	37,510

Not much needs to be added to what has been said in section 3.1 to explain the pronounced differences in the two estimates of third-level enrolments in 1975 for Africa and India. We know that the first (indirect) estimates were calculated with an equilibrated third-level labour stock in 1975 as a target, whereas the second (direct) estimates aim only at normal or average student numbers. This means that equilibrium will be reached at a much longer term. All this implies that in the first case Africa would still have to double its efforts while India on the contrary may draw upon its existing manpower stock.

In order to calculate the annual non-recurrent expenditure for the educational system in 1975, estimates have been made of the increment in student numbers in that year. Once more, this was done with the help of equations (3.2.1) and (3.2.2). It was assumed that the national incomes would increase by an average of 7 per cent. Table 3.2.2 summarises the results.

TABLE 3.2.2. ESTIMATED INCREMENTS OF THIRD AND SECOND-LEVEL STUDENTS IN 1975

In thousands.

REGION	THIRD-LEVEL STUDENTS	SECOND-LEVEL STUDENTS
Africa	26	280
Latin America	46	500
Asia	71	770
India	100	800
Total	243	2,350

3.3. *Feasibility of estimates*

It has been said on many other occasions that planning for education is essentially long-term planning. Decisions have to be taken many years ahead. When a country decides to increase considerably the number of third-level students at a certain point in time, it has to make sure that there is a sufficient number of primary school pupils about 12 years prior to that date. And this can be obtained only if a sufficient number of primary school teachers is available by that time. The teachers must have been trained still earlier. Hence, every forecast of the number of students is bound to have an upper limit. To provide a sufficient time lag, the year 1975 was chosen as the year for which estimates were to be made : the supply of primary school pupils must be adequate at the present time if the enrolment in higher education in 1975 is to be reached. A crude test will be applied to see whether the forecasts in this chapter are indeed feasible. The basis for this test is the proportions in developed countries and over time between first-level pupils, second-level pupils and third-level students. The third-level students in 1960 were compared to the second-level pupils 6 years before and so on. This proportion was determined for developed countries, because the proportions thus found would give a better indication of limits determined by abilities rather than by financial capacity. The ratios thus obtained should be considered for the time being as upper bounds for developing countries. The proportions turned out to be approximately 20:10:1. If we now compare the figures in Table 3.3.1 it can be seen that the numbers of third-level students in 1975 can be realized. This is even more true for the second-level pupils, since it may safely be assumed that there will be more primary-school pupils in 1969 than in 1960. The figure for Africa in the last column is least likely to be realized. Apparently, the total African higher trained manpower stock cannot reach a « normal » situation by 1975.

Table 3.3.1. THE FORECASTS TESTED
Figures in thousands

REGION	PRIMARY-SCHOOL PUPILS IN 1960	SECOND ESTIMATES		FIRST ESTIMATE
		SECOND-LEVEL STUDENTS IN '75	THIRD-LEVEL STUDENTS IN '75	THIRD-LEVEL STUDENTS IN '75
1	2	3	4	5
Africa	11,600	4,480	420	955
Latin America	25,000	7,930	750	900
Asia	33,600	12,400	1,120	1,250
India	32,400	12,700	1,600	1,060
Total	102,600	37,510	3,890	4,165

The above conclusions are based on assumptions which reflect only the restrictions posed by abilities and disregard those of a financial nature. The financial aspects will be discussed in the following chapter.

4. FINANCING FUTURE EDUCATION LEVELS

4.1. *Introduction*

This chapter discusses the financial implications of the educational expansion in the developing regions. Cost estimates will be based on the future numbers of students and pupils as calculated in the previous chapter and cost data per student. The basis for these cost data per student will be the present unit cost levels for the geographical areas described before : Africa, Latin America, Asia (excluding India, Japan and mainland China) and India, with corrections wherever necessary, for expected future changes. The choice of the standard cost data is discussed in section 4.2. These data will be used to estimate for 1975 the total annual recurrent and non-recurrent education expenditure. These estimates are presented in section 4.3. Finally, section 4.4 compares these estimates with the capacity of the developing regions to finance the educational expenditures from domestic resources.

4.2. *Standard cost data*

Africa

Cost data for primary and secondary education in a number of African countries are brought together in Table 4.2.1. Arithmetical averages have been calculated for each country on the basis of data on actual expenditures and on the figures submitted for budget purposes.

The question may be raised as to whether these averages should be used as standard cost figures for 1975, since the costs per pupil may increase with increasing per capita income. International comparison between high and low per capita income countries do indeed show a marked difference in per pupil expenditure level. Within the group of developing countries however, such differences are not

TABLE 4.2.1. RECURRENT AND NON-RECURRENT EXPENDITURE PER PUPIL IN U.S. DOLLARS

COUNTRY	PRIMARY EDUCATION		SECONDARY EDUCATION	
	RECURRENT EXPEN-DITURE PER PUPIL	NON-RECURRENT EXPEN-DITURE PER PUPIL	RECURRENT EXPEN-DITURE PER PUPIL	NON-RECURRENT EXPEN-DITURE PER PUPIL
Basutoland	11	34	127	126
Bechuanaland	17	53	121	242
Cameroun	24	49	324	648
Centr. Afr. Rep.	24	97	243	842
Chad	25	49	324	—
Congo (Braz.)	24	49	243	608
Congo (Léo.)	24	49	243	608
Dahomey	24	49	190	381
Ethiopia	20	28	106	400
Gabon	24	49	243	486
Ivory Coast	49	97	324	648
Kenya	14	42	308	489
Liberia	20	60	167	334
Malagasy Rep.	24	49	486	972
Mali	49	97	243	486
Mauritania	28	57	377	753
Niger	28	101	356	713
Nyasaland	7	17	213	426
Northern Rhodesia	14	42	196	—
Senegal	69	97	296	—
Sierra Leone	20	56	165	336
Sudan	49	52	166	425
Uganda	16	42	244	476
Upper Volta	49	97	361	770
Zanzibar	36	76	210	465
Average	28	59	251	529

Source : Final report. Meeting of Ministers of Education from African countries participating in the implementation of the Addis Ababa Plan. Unesco House, 20-30 March 1962. Unesco/ED/191, Annex X, Section B.

discernible and are well within the range of variation due to other factors. With regard to the recurrent per pupil expenditure, an increase might be expected to the extent that present teacher shortages (reflected in high pupil-staff ratios) will be relieved. A decrease in the average capital expenditure per additional pupil can be expected if there is a more intensive utilisation of the school capacity. This argument, however, seems to be more relevant for higher than for primary and secondary education.

For the purpose of this study, there seems little reason to deviate very much from the figures given in the Table, apart from some rounding. The following figures are chosen (U.S. dollars throughout) :

recurrent per pupil expenditure

		U.S. $
Primary education	:	30
Secondary »	:	250

non-recurrent per pupil-place expenditure
Primary education : 60
Secondary » : 500

No new information about higher education has become available since the financial estimates for the Tananarive Conference were prepared. The results of this earlier study, taking the lower estimates of the standard costs, were therefore used. The estimates amount to $ 1,000 per student for recurrent expenditure and $ 4,000 per student-place for non-recurrent expenditure.

Latin America

Table 4.2.2. presents some data on recurrent per pupil expenditure for primary and secondary education in a number of Latin American countries.

TABLE 4.2.2. RECURRENT EXPENDITURE PER PUPIL IN U.S. DOLLARS

COUNTRY	PRIMARY EDUCATION	SECONDARY EDUCATION
Argentina	20	—
Bolivia	6	—
Brasil	10	—
Colombia	17	237
Costa Rica	53	184
Cuba	44	312
Chile	42	—
Ecuador	12	—
El Salvador	26	142
Guatemala	17	586
Haïti	6	302
Honduras	15	—
Mexico	14	81
Nicaragua	21	270
Panama	43	212
Paraguay	5	—
Peru	14	—
Rep. Dominican	12	—
Venezuela	56	242
Average	23	257

Source : Report Santiago Conference.

The average expenditures amount to $ 23 and $ 257 per pupil in primary and secondary education, respectively. The Santiago Conference has estimated these costs at $ 35 and $ 200, respectively. For the purpose of this report the average standard cost was estimated at $ 30 and $ 250, respectively. The other standard cost data are based on the costs assumed in one of the papers for the Santiago Conference. The relevant data are as follows :

recurrent per student expenditure (higher education) :
U.S. $
600

non-recurrent per pupil (student)-place expenditure :
primary education : 65
secondary » : 300
higher » : 1,200

Asia and India

Very little reliable financial data are available for Asia and India. The available data suggest very low unit cost levels. The recurrent expenditure per student in higher education has been estimated at about $ 100. A major factor explaining these low cost figures are the very high student-staff ratios. From the point of view of the quality of the teaching it is undesirable that these high ratios continue to prevail in the future. The standard cost data chosen, therefore, have been somewhat lower than for other regions, but not at the present extremely low levels.

Summary

Table 4.2.3 summarizes the standard cost data for the various geographical areas as discussed in this section.

TABLE 4.2.3. ASSUMED STANDARD COST DATA FOR 1975 IN U.S. DOLLARS

REGION	RECURRENT PER PUPIL (STUDENT) EXPENDITURE			NON-RECURRENT PER PUPIL (STUDENT) - PLACE EXPENDITURE		
	FIRST LEVEL	SECOND LEVEL	THIRD LEVEL	FIRST LEVEL	SECOND LEVEL	THIRD LEVEL
Africa	30	250	1,000	60	500	4,000
Latin America	30	250	600	65	300	1,200
Asia (excl. India)	30	200	400	50	300	1,200
India	20	200	400	50	300	1,000

4.3. *Estimates of total recurrent and non-recurrent expenditure around 1975*

Rough estimates of total recurrent and non-recurrent expenditure for secondary and third-level education can now be made using the standard cost data, the estimated total number of students and pupils and the annual increase in these numbers around 1975, as presented in the tables 4.2.3., 3.3.1 (second estimates) and 3.2.2, respectively.

No estimates have been made concerning the number of pupils in primary education in 1975. Primary education targets will be determined by the financial limitations, rather than the manpower requirements of future production levels.

In other words, if there are sufficient pupils at the primary schools to « produce » annually in later years the required number of graduates from secondary and higher education, taking account of drop-outs etc., further expansion of primary education will depend upon financial possiblities. A crude test in section 3.3 has shown that the condition mentioned here is more or less fulfilled.

Three alternative assumptions have been made concerning the percentage of the population in the 6 to 14 year age group who will be enrolled in primary schools in 1975 : namely, 90 per cent, 75 per cent and 60 per cent. The population in this age group in 1975 has been assumed as 20 per cent of the total population as estimated by Rodenstein-Rodan : Africa : 56.8 million ; Latin America : 58.1 million ; Asia (excluding India) : 91.7 million ; and India : 105.5 million.

TABLE 4.3.1. ESTIMATED TOTAL RECURRENT AND NON-RECURRENT EDUCATIONAL EXPENDITURE IN MILLIONS OF U.S. DOLLARS IN 1975

REGION	FIRST LEVEL (75 % enrolment)			SECOND LEVEL			THIRD LEVEL			TOTAL		
	Recurrent	Non-recurrent	Total	Recurrent	Non-recurrent	Total	Recurrent	Non-recurrent	Total	Recurrent	Non-recurrent	Total
Africa	1,280	90	1,370	1,120	140	1,260	420	100	520	2,820	330	3,150
Latin America	1,310	110	1,420	1,980	150	2,130	450	60	510	3,740	320	4,060
Asia (excl. India) . . .	2,060	110	2,170	2,480	230	2,710	450	70	520	4,990	410	5,400
India	1,580	130	1,710	2,540	240	2,780	640	100	740	4,760	470	5,230

The annual increase in the number of primary school pupils around 1975 is estimated as follows : Africa 1.42 million ; Latin America 1.74 million ; Asia (excluding India) 2.29 million ; and India 2.63 million. The 1975 figures have been derived by applying the rates of growth in the total population to the figures for the population in the 6 to 14 year age group.

The above data enable the calculation of total expenditures for the three levels of education. Table 4.3.1. presents the results based on the assumption of 75 per cent enrolment in primary education. Table 4.3.2. gives the estimates for primary education only based on the other two alternatives.

TABLE 4.3.2. ESTIMATED TOTAL EXPENDITURE
FOR PRIMARY EDUCATION IN 1975 FOR 90 AND 60 PER CENT
ENROLMENT OF THE RELEVANT AGE GROUP

In millions of U.S. dollars.

REGION	RECURRENT EXPENDITURE		NON-RECURRENT	TOTAL	
	90 PER CENT ENROLMENT	60 PER CENT ENROLMENT		90 PER CENT ENROLMENT	60 PER CENT ENROLMENT
Africa	1,530	1,020	90	1,620	1,110
Latin America	1,570	1,040	110	1,680	1,150
Asia (excl. India)	2,480	1,650	110	2,590	1,760
India	1,900	1,270	130	2,030	1,400

The main conclusions to be drawn from Table 4.3.1 are that less than 10 per cent of total expenditure has to be made for non-recurrent purposes and that about 50 per cent of total expenditure will have to go into secondary education, 30 to 40 per cent into primary education and 10 to 15 per cent into higher education. Consequently, the financing of recurrent expenditure for secondary and primary education will pose the most serious problems.

5. FINANCIAL MEANS AVAILABLE FOR EDUCATION

The capacity to finance the desired levels of education from domestic resources is a very vague notion. This capacity must be considered simultaneously with other investment projects and with an analysis of a country's financial resources. Such a study cannot be undertaken in this paper, assuming that in principle it would be possible. For the purpose of this study, however, it seems sufficient to explore the range of variation in the available financial means and to make alternative assumptions about these means. They will be estimated on the basis of an average percentage of the regions' total income of 3, 4 and 5 per cent respectively. It should be noted that the present average percentages of national income spent on education range between 1.5 and 3 per cent for developing countries and between 3 and 5.5 per cent for developed countries. The absolute amounts available for education corresponding to the three chosen alternatives are given in Table 5.1. In this Table we have at the same time included the total (recurrent and non-recurrent) annual education expenditure for all levels corresponding to the three alternative enrolment targets for primary education.

TABLE 5.1. ESTIMATED TOTAL EDUCATIONAL EXPENDITURE AND DOMESTIC FINANCIAL MEANS UNDER ALTERNATIVE ASSUMPTIONS IN 1975

In millions of U.S. dollars.

REGION	TOTAL EDUCATIONAL EXPENDITURE			DOMESTIC FINANCIAL MEANS		
	90 PER CENT PRIMARY ENROLMENT	75 PER CENT PRIMARY ENROLMENT	60 PER CENT PRIMARY ENROLMENT	5 PER CENT OF GNP	4 PER CENT OF GNP	3 PER CENT OF GNP
Africa	3,400	3,150	2,890	2,430	1,950	1,460
Latin America	4,320	4,060	3,790	6,460	5,170	3,880
Asia (excl. India)	5,820	5,400	4,990	5,060	4,040	3,030
India	5,550	5,230	4,920	2,930	2,340	1,760

If these calculations have any value then the following very tentative conclusions may be drawn from this table.

The financing of the future desirable educational levels poses nearly insoluble long-term problems. Under moderate assumptions the financial means of the developing regions, with the notable exception of Latin America, are insufficient to finance the estimated educational expenditure. The order of magnitude of the deficits far surpasses the amounts that reasonably can be expected to come forward from foreign financial assistance. The deficits are most acute for India and Africa. In these cases not even the combination of the most modest expansion of primary education and the most extreme efforts of these regions enables the gap to be bridged between means and needs.

The implications of these conclusions are obvious and not new. Moderation in the accelerated expansion of those sectors of education which are only remotely related to the needs of increasing production has to be considered. Continuous efforts must be made to reduce the unit cost levels and to improve the efficiency of the educational systems. Financial educational aid policies must take into account the fact that the major share of the financial means for education are needed for recurrent purposes. Emphasis on aid for investment purposes may aggravate the future financial difficulties on the recurrent account. Further discussion of these and other implications is outside the scope of this paper. But one final remark must be made : one can only hope that the figures of this report are seriously wrong and systematically overestimate the magnitude of the problem.

Chapter 5

EDUCATIONAL EXPENDITURE IN DEVELOPING AREAS: SOME STATISTICAL ASPECTS[1]

by

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INTRODUCTION

There has been a considerable improvement in the statistics on education published over the past few years, particularly those by UNESCO. These new data have made it possible to test some of the more commonly used assumptions about the relationship between educational and economic development. The present study has attempted to analyse the statistical link between public expenditures for education and Gross Domestic Product (both in total and in per capita values) through the use of regression analysis based on data for 104 countries for 1961. The findings, obtained in an earlier version of this work based on data for 1960 for 94 countries, have also been included.

The results obtained have raised doubts about the validity of methods based on international comparisons to compensate for the lack of series analysis.

RESULTS OF THE REGRESSION ANALYSIS

The variables used were :

R, Gross Domestic Product, in millions of U.S. dollars ;

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[1] The text of this article is based on a fuller study completed for the OECD Fellowship Training Course in Human Resource Development held at Caen, France (2nd to 20th August 1965). Complete details of the study are contained in the proceedings of this course. This chapter is an extensively revised version of the article originally prepared under the same title for the September 1964 Conference on the *Financing of Education for Economic Growth*. The revisions include improvements in the data upon which the analysis is based and a further investigation of the statistical methodology.

E, Public Expenditures for Education, in millions of U.S. dollars, and

P, Population, in millions of inhabitants.

The four following forms of equations have been used.

a) $\log E = \alpha_1 \log R + \alpha_0$
b) $\log E/P = \beta_1 \log R/P + \beta_0$
c) $\log E = \gamma_1 \log R + \gamma_2 \log P + \gamma_0$
d) $\log E = \delta_1 \log R/P + \delta_2 \log R + \delta_0$

The results obtained for equation (*a*) are indicated in Tables 1 and 2 and in Graph 1 ; for equation (*b*), in Tables 3 and 4 and in Graph 2 ; for equations (*c*) and (*d*), in Table 5.

Simple regression based on total values

For the total set of countries studied, the equations are :

for 1960 : $\log E = \underset{(0.03)}{1.069} \log R - 1.794 \quad (r^2 = 0.933)$

for 1961 : $\log E = \underset{(0.03)}{1.074} \log R - 1.759 \quad (r^2 = 0.933)$

The results obtained for the two years are practically identical, although the two series upon which the results were based differed with regard to the values of the variables, the year studied, the number of countries included in the study and the dollar exchange rates.

The study was then enlarged to calculate equations not only for the total set of countries but for homogenous groups of countries — based on predetermined classification criteria.

The first grouping was by continent, after having first separated all the industrialised countries into one group.

The second grouping was based on the level of GDP per inhabitant, using the classifications established by the UN in its report on *The Social Situation in the World,* UN 1961, (class I : $ 1000 and more ; class II : $ 575 to 999 ; class III : $ 350 to 574 ; class IV : $ 200 to 349 ; class V : $ 100 to 199 ; class VI : less than $ 100).

In each method of grouping, and for each of the groups, the correlation coefficients were greater than 0.90.

Within each group the elasticities were not significantly different from 1 ; the elasticity was slightly greater than 1, however, for the total set of countries.

Forecasts based on these results would, of necessity, yield a rate of expansion in the level of educational expenditures which was approximately equal to that of GDP. This conclusion appears to contradict the world development of educational expenditures over the past few years. Such expenditures have in general increased at a considerably faster rate than has GDP.

Simple regression based on per capita values

For the entire set of countries the equations are :

for 1960 : $\log \frac{E}{P} = \underset{(0.05)}{1.241} \log \frac{R}{P} - 2.135 \quad (r^2 = 0.870)$

TABLE 1. SIMPLE REGRESSIONS ON TOTAL VALUES OF 1960 (GROUPING OF COUNTRIES BY CONTINENT

GROUP OF COUNTRIES	No.		r* Corr. Coeff.	r^2 Determin. Coeff.	Confidence limits for the elasticity coeff. at the 0.05 level
African countries	35	$\log E = 1.006 \log R - 1.664$ (0.07)	+ 0.934 (TS)	0.872	0.87 to 1.14
Asian countries	19	$\log E = 0.776 \log R - 0.902$ (0.10)	+ 0.888 (TS)	0.789	0.57 to 0.98
Latin American countries .	20	$\log E = 1.032 \log R - 1.749$ (0.06)	+ 0.973 (TS)	0.947	0.91 to 1.15
All above 74 countries . .	74	$\log E = 0.955 \log R - 1.508$ (0.04)	+ 0.940 (TS)	0.884	0.87 to 1.04
Industrialised countries . .	19	$\log E = 1.10[illegible] \log R - 1.764$ (0.04)	+ 0.989 (TS)	0.978	1.02 to 1.19
All countries**	95	$\log E = 1.0[illegible] \log R - 1.794$ (0.03)	+ 0.966 (TS)	0.933	1.01 to 1.13

* TS : Significant at the 0.01 level.
** The above 93 countries plus Spain and Portugal.

TABLE 2. SIMPLE REGRESSIONS ON TOTAL VALUES OF 1961 (GROUPING OF COUNTRIES ACCORDING TO GDP PER INHABITANT)

GROUP OF COUNTRIES	No.		r* Corr. Coeff.	r^2 Determin. Coeff.	Confidence limits for the elasticity coeff. at the 0.05 level
I. $ 1000 and above	15	$\log E = 1.008 \log R - 1.398$ (0.05)	+ 0.986 (TS)	0.972	0.91 to 1.11
II. $ 575 to less than $ 1000	7	$\log E = 1.123 \log R - 1.807$	+ 0.967 (TS)	0.935	0.78 to 1.46
III. $ 350 to less than $ 575 .	10	$\log E = 0.980 \log R - 1.462$ (0.115)	+ 0.949 (TS)	0.901	0.71 to 1.25
IV. $ 200 to less than $ 350 .	15	$\log E = 0.984 \log R - 1.438$ (0.07)	+ 0.972 (TS)	0.945	0.84 to 1.13
V. $ 100 to less than $ 200 .	27	$\log E = 1.061 \log R - 1.659$ (0.085)	+ 0.928 (TS)	0.861	0.89 to 1.24
VI. Less than $ 100	30	$\log E = 0.942 \log R - 1.547$ (0.08)	+ 0.919 (TS)	0.844	0.79 to 1.[illegible]0
I and II	22	$\log E = 1.028 \log R - 1.479$ (0.04)	+ 0.983 (TS)	0.966	0.94 to 1.12
III and IV	25	$\log E = 0.969 \log R - 1.404$ (0.05)	+ 0.973 (TS)	0.946	0.87 to 1.07
All countries	104	$\log E = 1.074 \log R - 1.759$ (0.03)	+ 0.966 (TS)	0.933	1.02 to 1.13

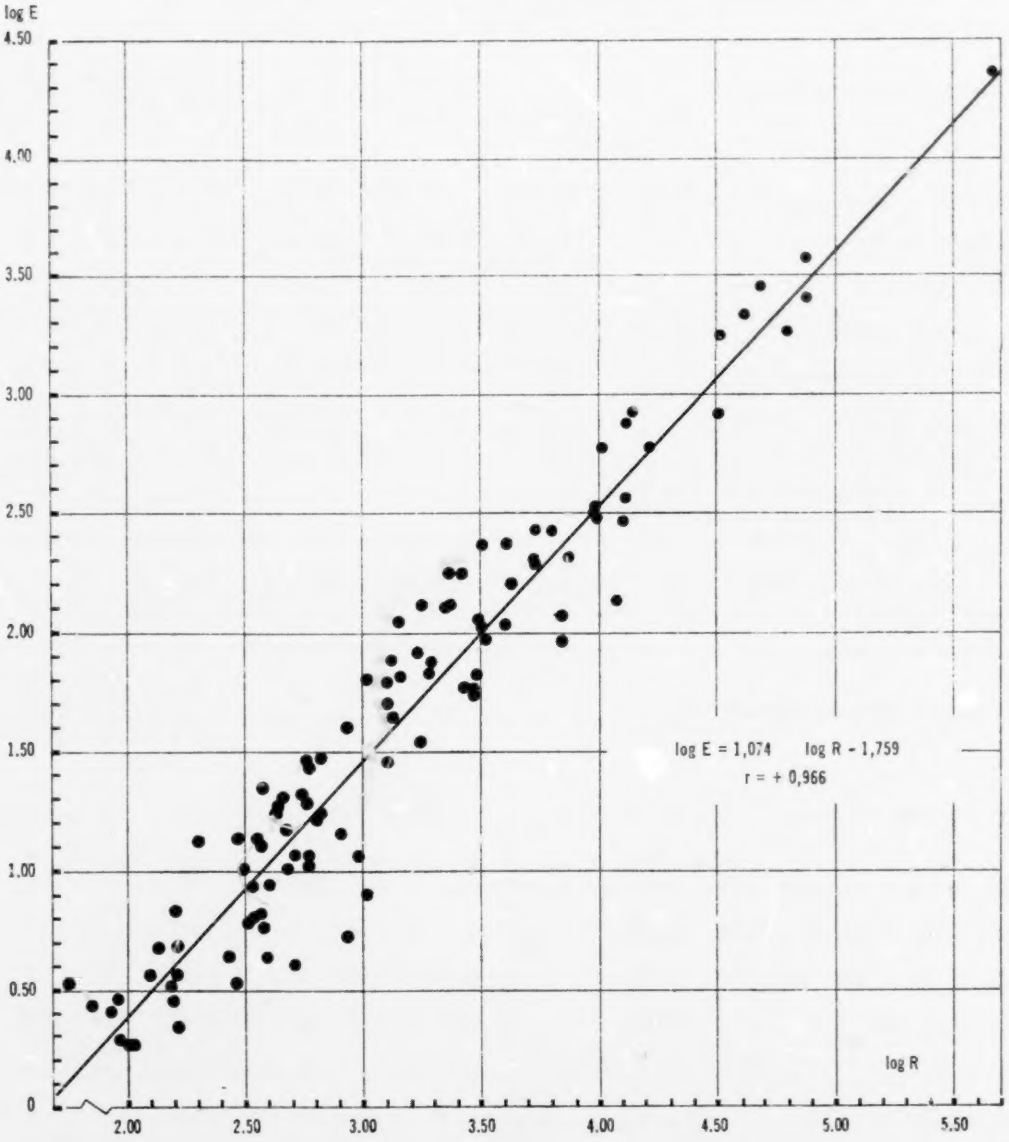
* TS : Significant at the 0.01 level.

$$\text{for 1961 : } \log \frac{E}{P} = \underset{(0.04)}{1.223} \log \frac{R}{P} - 2.044 \quad (r^2 = 0.885)$$

The results for the two years are, once more, practically identical. The correlations obtained for per capita values are somewhat smaller than those based on total values, and the elasticities are somewhat larger.

When the countries are grouped, as in the previous case, the results of the regression analysis are quite different from the earlier findings. While the correlations based on total values had been consistently very high for all groups, those based on per capita

Graph 1. SIMPLE REGRESSION ON TOTAL VALUES OF 1961



values varied considerably, sometimes being significant and sometimes not.

Two explanations may be offered for these results : First, the grouping used was itself a function of the independent variable of the regression equation (GDP per capita). The process of grouping therefore limited the variance of this independent variable and thus created the different correlation results.

Secondly, the class limits in per capita GDP between groups of countries were arbitrarily chosen, and very different results would be obtained for different sets of class limits. To illustrate this condition we established another grouping of the countries, using different limits of per capita GDP, and thus obtained generally higher correlations. For example, for the group of countries for which the per capita revenue was greater than $ 1000 the correlations were not significant. On the other hand, there is a very significant correlation found for the group of countries for which the revenue is greater than $ 1200.

It would appear that a great deal of caution should be exercised when using a method of analysis for which the results may be so completely changed through arbitrary choices outside the scope of the study itself.

Classifying the countries into only two groups would appear to be quite convenient. We have, therefore, separated the countries according to whether or not their per capita GDP was greater than $ 160.

For 1961 figures the elasticities of the poor countries were considerably greater than those of the richer countries. However, this conclusion becomes less evident for the statistics for 1960. The original conclusion re-appears if, however, the class limit is changed to $ 140.

TABLE 3. SIMPLE REGRESSIONS ON THE PER CAPITA VALUES OF 1960 (GROUPING OF COUNTRIES BY CONTINENT)

GROUP OF COUNTRIES	No.	REGRESSION EQUATION	r* Corr. Coeff.	r^2 Determin. Coeff.	Confidence limits for the elasticity coeff. at the 0.05 level
African countries	35	$\log \frac{E}{P} = \underset{(0.15)}{1.135} \log \frac{R}{P} -1.920$	+ 0.798 (TS)	0.637	0.83 to 1.44
Asian countries	19	$\log \frac{E}{P} = \underset{(0.32)}{1.333} \log \frac{R}{P} -2.263$	+ 0.715 (TS)	0.511	0.67 to 2.00
Latin American countries .	20	$\log \frac{E}{P} = \underset{(0.12)}{1.303} \log \frac{R}{P} -2.379$	+ 0.936 (TS)	0.876	1.06 to 1.55
All above 74 countries . . .	74	$\log \frac{E}{P} = \underset{(0.09)}{1.132} \log \frac{R}{P} -1.914$	+ 0.833 (TS)	0.694	0.96 to 1.31
Industrialised countries . .	19	$\log \frac{E}{P} = \underset{(0.17)}{1.059} \log \frac{R}{P} -1.536$	+ 0.830 (TS)	0.689	0.70 to 1.42
All countries	95	$\log \frac{E}{P} = \underset{(0.05)}{1.241} \log \frac{R}{P} -2.135$	+ 0.933 (TS)	0.870	1.14 to 1.34

* TS : Significant at the 0.01 level.
** Above 93 countries plus Spain and Portugal.

In conclusion, it is obvious that it is possible to « prove » divergent theories through judicious manipulations of the figures. The results obtained may well depend upon the limits used and should be evaluated in this light.

Multiple regressions

For the entire set of countries for 1961 the following equations were obtained :

$$\log E = 1.224 \log R - 0.243 \log P - 2.033 \quad (R^2 = 0.943)$$
$$\log E = 0.246 \log \frac{R}{P} + 0.979 \log R - 2.035 \quad (R^2 = 0.944)$$

TABLE 4. SIMPLE REGRESSIONS ON PER CAPITA VALUES OF 1961 (GROUPING OF COUNTRIES ACCORDING TO GDP/PER INHABITANT)

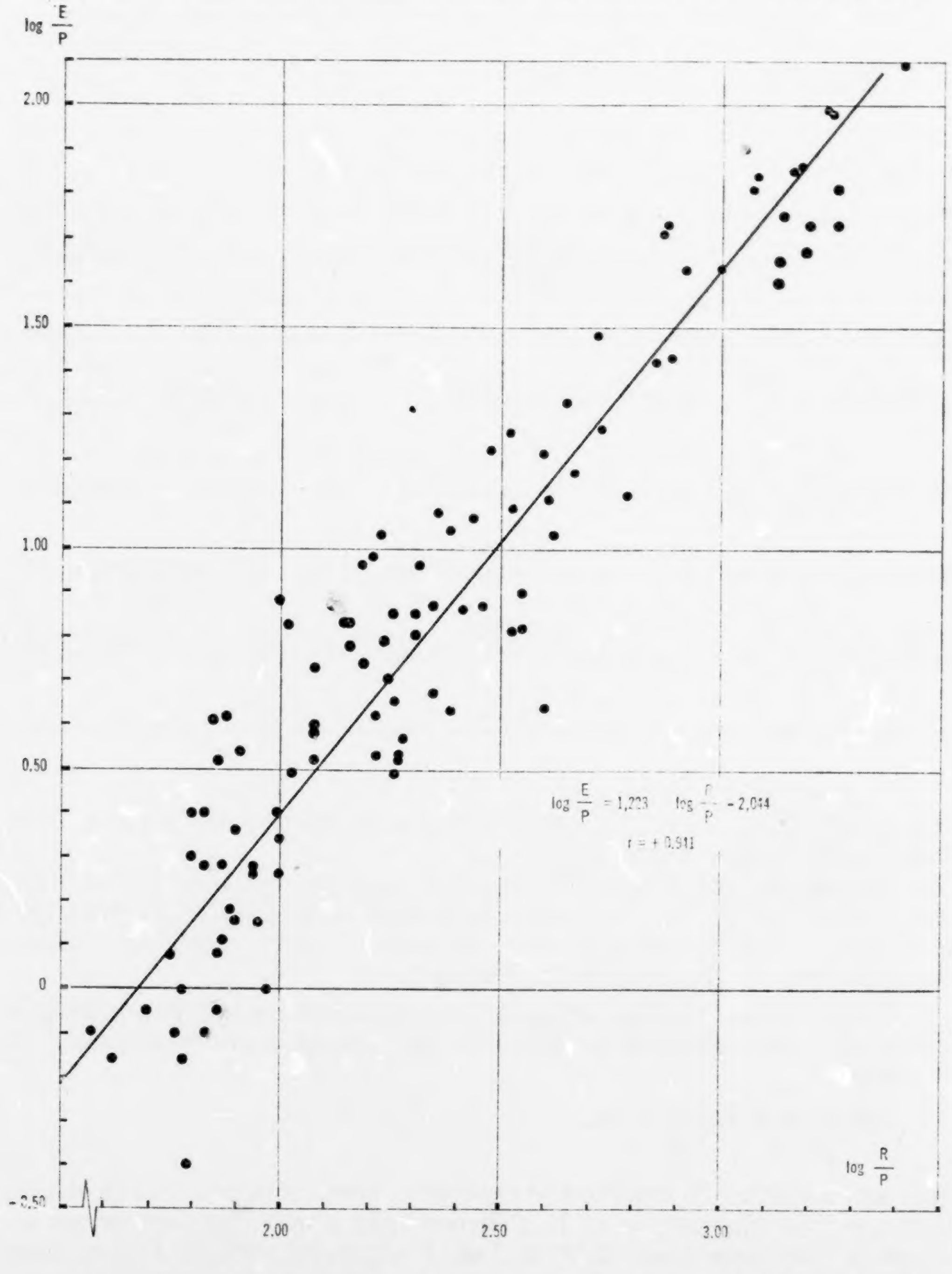
GROUP OF COUNTRIES	No.	REGRESSION EQUATION	r Cor. coeff.	r^2 Determin. Coeff.	Confidence limits for the elasticity coeff. at the 0.05 level
I. $ 1000 and above	15	$\log \frac{E}{P} = \underset{(0.36)}{0.689} \log \frac{R}{P} - 0.375$	+ 0.469 (NS)	0.220	-0.09 to 1.47
II. $ 575 to less than $ 1000	7	$\log \frac{E}{P} = \underset{(1.56)}{4.155} \log \frac{R}{P} - 10{,}401$	+ 0.765 (S)	0.585	0.13 to 8.18
III. $ 350 to less than $ 575	10	$\log \frac{E}{P} = \underset{(0.96)}{3.046} \log \frac{R}{P} - 6.916$	+ 0.747 (S)	0.558	0.84 to 5.26
IV. $ 200 to less than $ 350	15	$\log \frac{E}{P} = \underset{(0.53)}{1.109} \log \frac{R}{P} - 1.734$	+ 0.474 (NS(	0.225	-0.02 to 2.24
V. $ 100 to less than $ 200	27	$\log \frac{E}{P} = \underset{(0.385)}{0.381} \log \frac{R}{P} - 0.138$	+ 0.194 (NS)	0.038	-0.41 to 1.17
VI. Less than $ 100	30	$\log \frac{E}{P} = \underset{(0.49)}{1.571} \log \frac{R}{P} - 2.742$	+ 0.519 (TS)	0.270	0.57 to 2.57
I and II	22	$\log \frac{E}{P} = \underset{(0.19)}{0.996} \log \frac{R}{P} - 1.356$	+ 0.770 (TS)	0.593	0.60 to 1.39
III and IV	25	$\log \frac{E}{P} = \underset{(0.29)}{0.994} \log \frac{R}{P} - 1.483$	+ 0.582 (TS)	0.339	0.39 to 1.59
A. $ 1200 and more	12	$\log \frac{E}{P} = \underset{(0.40)}{1.475} \log \frac{R}{P} - 2.931$	+ 0.759 (TS)	0.576	0.58 to 2.37
B. $ 600 to less than $ 1000	10	$\log \frac{E}{P} = \underset{(0.48)}{1.977} \log \frac{R}{P} - 4.180$	+ 0.825 (TS)	0.681	0.87 to 3.08
C. $ 300 to less than $ 600	14	$\log \frac{E}{P} = \underset{(0.84)}{0.991} \log \frac{R}{P} - 1.478$	+ 0.323 (NS)	0.104	-0.38 to 2.82
D. $ 150 to less than $ 300	[illegible]	$\log \frac{E}{P} = \underset{(0.455)}{0.680} \log \frac{R}{P} - 0.777$	+ 0.298 (NS)	0.089	-0.26 to 1.62
E. Less than $ 150	43	$\log \frac{E}{P} = \underset{(0.25)}{1.954} \log \frac{R}{P} - 3.428$	+ 0.777 (TS)	0.604	1.45 to 2.45
A + B	22	$\log \frac{E}{P} = \underset{(0.185)}{0.996} \log \frac{R}{P} - 1.356$	+ 0.770 (TS)	0.593	0.60 to 1.38
C + D	39	$\log \frac{E}{P} = \underset{(0.19)}{1.001} \log \frac{R}{P} - 1.511$	+ 0.659 (TS)	0.434	0.62 to 1.38
$ 160 and above	59	$\log \frac{E}{P} = \underset{(0.06)}{1.189} \log \frac{R}{P} - 1.965$	+ 0.928 (TS)	0.861	1.06 to 1.32
Less than $ 160	45	$\log \frac{E}{P} = \underset{(0.22)}{1.955} \log \frac{R}{P} - 3.430$	+ 0.801 (TS)	0.642	1.51 to 2.40
All countries	104	$\log \frac{E}{P} = \underset{(0.04)}{1.223} \log \frac{R}{P} - 2.044$	+ 0.941 (TS)	0.885	1.14 to 1.31

TS significant at the 0.01 level
S Significant at the 0.05 level
NS Significant at a level less than 0.05

ANALYSIS OF THE RESULTS

The use of the method of least squares is based on the assumption of a certain number of conditions. It would be appropriate to examine whether these conditions have been respected.

Graph 2. SIMPLE REGRESSION ON PER CAPITA VALUES OF 1961



One immediate question occurs through the high correlation between population and total GDP as well as that between population and total educational expenditures. It is doubtful then that the residues μ_1 in the equation :

$$\log E_i = \alpha_i \log R_i + \alpha_0 + \mu_i$$

will have a biased distribution.

But there appears to exist a serious bias in the regression based on *total* values.

TABLE 5. MULTIPLE REGRESSIONS ON THE DATA FOR 1961

GROUP OF COUNTRIES	No.	REGRESSION EQUATION	R^2 Determin. Coeff.	Confidence limits for γ^1 at the level of 0.05	Confidence limits for γ^2 at the level of 0.05
Less than $ 160	45	$\log E = 1.950 \log R - 0.988 \log P - 3.388$ (0.22) (0.24)	0.889	1.49 to 2.41	-1.47 to -0.50
More than $ 160	59	$\log E = 1.205 \log R - 0.224 \log P - 1.996$ (0.065) (0.08)	0.962	1.08 to 1.33	-0.39 to -0.06
All countries	104	$\log E = 1.224 \log R - 0.243 \log P - 2.033$ (0.04) (0.06)	0.943	1.14 to 1.31	-0.36 to -0.13

GROUP OF COUNTRIES	No.	REGRESSION EQUATION	R^2 Determin. Coeff.	Confidence limitsfor $\gamma 1$ at the level of 0.05	Confidence limits for $\gamma 2$ at the level of 0.05
Less than $ 160	45	$\log E = 1.028 \log \frac{R}{P} + 0.962 \log R - 3.463$ (0.24) (0.06) (11.7 %) (77.6 %)	0.892	0.55 to 1.51	0.84 to 1.09
More than $ 160	59	$\log E = 0.224 \log \frac{R}{P} + 0.980 \log R - 1.993$ (0.08) (0.04) (6.6 %) (89.6 %)	0.962	0.06 to 0.39	0.91 to 1.05
All countries	104	$\log E = 0.246 \log \frac{R}{P} + 0.979 \log R - 2.035$ (0.06) (0.03) (9.4 %) (85.0 %)	0.944	0.13 to 0.36	0.91 to 1.05

It is our contention[1] that :
the correlations based on total values are necessarily higher than those based on per capita values ;
the elasticities are necessarily smaller, and the greater the correlation, the more the two regression lines tend to be parallel to the angle bi-sector of the co-ordinate axes. From the latter condition follows the tendency of the elasticity toward 1.

The results obtained depend upon whether or not population is included in the regression. However, the use of a single equation of the type :

$$\log \frac{E}{P} = \beta_1 \log \frac{R}{P} + \beta_0$$

does not necessarily resolve the problems, since it is possible to obtain through this equation what K. Pearson calls « spurious correlation » : when P increases then E/P and R/P decrease. When P decreases E/P and R/P decrease. There is thus necessarily a positive correlation, based on a manipulation of the variables and not on the character of the phenomena in question.

However, this *a priori* apprehension does not appear to be confirmed by the correlation computations. The results obtained through the simple regression based on per capita values are practically identical with those obtained through the multiple regression $E = f(R,P)$ or $E = f(R/P, R)$.

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[1] The authors have included a geometric argument for these controversial statements in the text of the article prepared for the training course.

Finally, it seems rather doubtful whether operational conclusions should be drawn on the basis of these statistical results.

Cross sectional analysis of the type explained above, particularly when there is a temptation to draw precise indications about the development of variables over time, must assume that there is a certain amount of stability in the phenomena under study.

We believe that such stability, with relation to education in general and educational expenditures in particular, is in contradiction to both tendencies in the past and those which can be reasonably expected to occur in the future.

For some industrialised countries we have been able to calculate dynamic elasticities based on time series analysis. In each case we obtained for the post-war period elasticities which were considerably greater than 1. Such was not the case when international comparisons were used — even those based on the industrialised countries only. (See Tables 1 and 3.)

The results obtained through international comparisons should therefore be interpreted with considerable caution. Although complete time series are not available research could also be usefully undertaken in this area. The results would certainly considerably enrich our knowledge of the link between education and economic development.

TABLE 6. POPULATION, GROSS DOMESTIC PRODUCT, PUBLIC EXPENDITURES FOR EDUCATION AND DOLLAR EXCHANGE RATE, FOR 104 COUNTRIES, 1961

COUNTRIES (IN DESCENDING ORDER OF PER CAPITA GDP)	POPULATION (P) *Millions of inhabitants*	GROSS DOMESTIC PRODUCT (R) *Millions of US dollars*	PUBLIC EXPENDITURES FOR EDUCATION (E) *Millions of US dollars*	DOLLAR EXCHANGE RATE
United States	138.8	469861	22800.0	1.00
New Zealand	2.4	4384	157.8	0.289
Switzerland	5.5	9923	294.1	3.88
Canada	18.3	32761	1741.8	1.02
Sweden	7.5	13172	741.3	4.73
Australia	10.5	16733	559.0	0.390
Luxembourg	0.3	489	14.7	48.5
Norway	3.6	5520	259.8	5.79
United Kingdom	52.9	75681	3716.3	0.314
Denmark	4.6	6437	261.6	6.26
Germany	56.2	76590	2538.1	3.68
France	46.2	62718	1825.8	4.34
Netherlands	11.6	13748	808.3	2.88
Belgium	9.2	10761	591.6	49.1
Israel	2.2	2423	171.9	1.92
Italy	49.9	41496	2123.3	463
Austria	7.1	5465	188.3	25.8
Puerto Rico	2.4	1828	129.6	1.00
Finland	4.5	3271	227.4	4.31
Ireland	2.8	1979	74.2	0.301
Venezuela	7.6	5333	200.0	4.58
Trinidad and Tobago	0.9	539	11.4	1.77
South Africa	18.1	9707	334.5	0.560
Japan	94.1	49021	2837.9	322
Argentina	21.1	9834	309.2	86.2
Uruguay	2.9	1293	60.9	7.41
Jamaica	1.6	683	17.3	0.358
Chile	7.9	3200	103.7	1.54
Spain	30.6	12224	135.5	59.9
Panama	1.1	443	18.2	0.972
Greece	8.4	3010	55.1	31.5
Mexico	36.1	12734	285.2	12.0
Portugal	8.9	2989	58.1	22.8
Singapore	1.7	567	20.8	3.58
Cuba	6.9	2293	126.6	1.00
Barbados	0.2	71	2.7	1.63
Colombia	14.4	4112	107.5	6.89
British Guiana	0.6	161	6.8	1.72
Turkey	28.6	7523	205.1	6.56
Nicaragua	1.5	377	6.6	6.99
Costa Rica	1.2	301	13.5	8.59
Algeria	10.8	2471	129.3	5.88
Lebanon	1.8	410	8.6	4.63
Jordan	1.7	380	12.7	0.383
Federation of Malaysia	7.1	1474	65.0	3.58
Mauritius	0.7	138	4.7	5.16
Gabon	0.4	91	2.8	289
Dominican Republic	3.1	597	11.5	0.971
Hong Kong	3.2	598	10.4	13.9
Federation of Rhodesia & Nyasaland	10.0	1860	34.3	0.289
Ghana	7.0	1276	49.6	0.356
Honduras	1.9	347	8.5	2.11
Equador	4.5	814	14.0	17.0

COUNTRIES (IN DESCENDING ORDER OF PER CAPITA GDP)	POPULATION (P) *Millions of inhabitants*	GROSS DOMESTIC PRODUCT (R) *Millions of US dollars*	PUBLIC EXPENDITURES FOR EDUCATION (E) *Millions of US dollars*	DOLLAR EXCHANGE RATE
Brazil	73.1	13118	366.0	227
Peru	11.2	1931	62.1	28.2
Libya	1.2	204	13.1	0.343
Guatemala	3.9	645	16.4	0.983
Senegal	3.0	491	10.0	289
Iraq	6.7	1079	63.2	0.550
United Arab Republic	26.6	4150	235.8	0.350
Iran	20.7	3164	113.0	75.8
Ivory Coast	3.3	472	19.8	306
Morrocco	12.0	1719	81.2	4.69
Tunisia	4.2	592	28.5	0.420
Ceylon	10.2	1356	75.4	4.54
China (Taiwan)	11.0	1332	43.4	43.7
Philippines	28.3	3413	92.5	3.69
Salvador	2.6	317	10.0	3.66
Syria	5.0	600	27.1	4.50
Congo (Brazzaville)	0.8	87	2.5	289
Republic of Korea	25.8	2676	173.0	82.3
Thailand	27.2	2749	58.7	19.6
Congo (Leopoldville)	14.5	1447	109.5	48.3
Bolivia	3.5	350	6.3	118.91
Haiti	4.2	395	4.3	4.69
Cameroons	4.2	387	5.7	388
Nigeria	35.8	3078	66.2	0.339
Paraguay	1.8	156	3.2	172
Kenya	8.4	677	29.6	0.332
Dahomey	2.1	164	4.8	289
Mali	4.2	332	6.0	289
Central African Republic	1.2	96	1.9	289
Mauritania	0.8	57	3.2	289
India	435.5	32117	820.0	4.78
Pakistan	94.5	7043	113.6	4.72
Indonesia	96.2	7024	91.3	35.2
Togo	1.5	108	1.8	333
Sudan	12.1	874	40.2	0.452
Republic of Madagascar	5.6	391	22.6	275
Cambodia	5.3	365	13.6	57.2
Laos	1.9	126	3.6	80.0
Republic of Viet Nam	14.5	980	11.4	81.0
Tanganyika	9.4	593	18.9	0.318
Uganda	6.8	432	17.3	0.363
Angola	4.8	297	3.3	28.7
Afghanistan	14.2	870	5.2	41.0
Chad	2.7	168	2.8	327.0
Nigeria	2.9	167	2.2	293
Borneo	22.7	1276	27.9	4.40
Nepal	9.4	516	4.0	7.69
Ethiopia	20.6	1050	8.0	2.48
Somaliland	2.0	102	1.8	7.14
Mozambique	6.6	278	4.4	28.7
Upper Volta	4.4	161	3.6	336

Sources : Population — *Demographic Yearbook,* United Nations, 1963. — Gross Domestic Product — *Annual Yearbook of National Accounts,* United Nations, 1963, Table 3B, pp. 327-331. Public Expenditures for Education — *Statistical Yearbook,* UNESCO, 1964, (unpublished). Dollar Exchange Rate — *Annual Yearbook of National Accounts,* United Nations, 1963 Table 3B, pp. 327-33. Note that figures do not necessarily correspond to official exchange rates, but are the accounting values used by the UN Statistical Office for the conversion of GDP figures into US dollar terms.

Part II

FINANCING EDUCATION IN DEVELOPED NATIONS

A

GENERAL CONCEPTS

6

ECONOMIC GROWTH AND THE PRINCIPLES OF EDUCATIONAL FINANCE IN DEVELOPED COUNTRIES

Alan **Peacock** and Jack **Wiseman**
University of York, UK

7

PUBLIC EXPENDITURES ON EDUCATION

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Chapter 6

ECONOMIC GROWTH AND THE PRINCIPLES OF EDUCATIONAL FINANCE IN DEVELOPED COUNTRIES

by

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INTRODUCTION

This conference on the finance of education follows earlier discussions of the relation between education and economic growth. In this regard, it typifies the revival of interest in « human capital » which in turn bears a clear relation to the dissatisfaction felt by economists with Neo-Keynesian explanations of the causes of growth. The study of « human capital » has been concentrated upon the problems of the relation between educational « investment » and the growth of community output, and has been extended to cover such matters as methods of education finance, with the characteristics of education as a form of current consumption, and the relation between the size and methods of education provision and socio-economic objectives other than growth treated as secondary or ancillary to the central question of growth.

This is not, of course, to suggest that economists are unaware of these other questions. For example, it is common, indeed usual, to point out that education is a form of consumption as well as a form of investment bringing increased future earnings, or to acknowlegde that education brings « psychic return » as well as monetary ones to the educated. Nevertheless, the preoccupation with the problems of improving growth rates has concentrated attention on the assessment of the efficiency of educational « investment », to the relative neglect of other characteristics of the education « market », such as, for example, its efficiency as a device for meeting current « consumption demand »[1].

The frequency with which we must refer to studies of education and economic growth will make it clear that we do not belittle their importance. Attempts to estimate the contribution of investment in human beings to economic growth, and to assess the real returns accruing to individuals and communities, have made and are making a significant contribution to our understanding of economic phenomena in general and of the growth process in particular[1]. However, we now need to cultivate the rest of our garden. Economists tend to speak with two voices on education issues : a « technical » voice making statements about education as an investment, and a « policy » voice announcing proposals about the size, character and means of finance of education that would be appropriate for a particular country at a particular time. One might reasonably expect to find some relation between the two, although we must not infer from this that economists need necessarily agree about education policy, any more than they need agree about policy of any other kind. But if our policy views are to appear as anything more than simple opinion, then we must be able to show the relation between our technical statements (about which agreement should be conceptually possible), and our evaluation of social objectives.

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[1] The characteristics of education as a consumption good are not simple. Who would assert that Huckleberry Finn (or his father) would have obtained positive « psychic returns » from Huck being made to attend school ?

It is to this question that we propose to address ourselves. We shall try to clarify the relation between the technical characteristics of education as an investment and the policy-making environment in which questions of educational finance are decided. Our purpose is not to make normative propositions[2] : it will become evident that we would question whether such propositions of any generality are possible. Rather, our aim is the simpler one of clarifying the *characteristics* of the ends-means nexus of which education finance is a part, with a view to improving our understanding of the implications of financial policies and hence the nature and origins of policy disagreements. This in turn suggests directions in which future research might profitably proceed.

THE « VEIL » OF FINANCE

The study of education as a form of investment in human beings encourages the treatment of methods of finance as a second-order problem — a simple means by which the results of the investment study can be translated into policy changes. There is at least an implicit assumption that methods of finance are simply a « veil » obscuring the more fundamental real issues. Thus, it is not wildly unrealistic to describe the place of finance of education in this type of study in this fashion : first establish the « right » volume and character of community resources to devote to different kinds of education in order to maximise the community's rate of growth ; and then devise methods of finance that would bring about the desired result[1]. Ideally, that is, such a study would set out to discover marginal social benefit-cost ratios for all relevant types of « investment » in education, then compare these with the similar ratios for other forms of (human and physical) investment, and on this basis propose financial arrangements that would adjust the allocation of resources between uses in a fashion that brought the ratios into equality. In this formulation, finance appears only as a means, a technique of implementing a growth policy guided by the « real » considerations just described.

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[1] For a useful account of methods of estimation, see T. W. Schultz *The Economic Value of Education.* For a frontal assault on these methods, see T. Balogh and P. Streeten « The Coefficient of Ignorance », *Bulletin of the Oxford Institute of Statistics,* Vol. 25, No. 2, 1963.

[2]. For our own value judgments about educational policy, see *Education for Democrats,* London, 1964.

This procedure gives rise to two sorts of difficulties. The first concerns the digging out of the necessary information about « real » magnitudes and the second with the integration of the information into a policy framework which of necessity cannot treat growth as the sole policy objective. While it is procedurally convenient to treat these groups of difficulties as distinct, we shall argue that they are in fact interrelated. It is difficult to conceive of a study of investment in human beings that would be free from implications about important social objectives other than economic growth. We shall find that methods of educational finance are of interest in both contexts.

THE RETURNS TO HUMAN INVESTMENT IN RELATION TO EDUCATION FINANCE

We do not propose to offer a lengthy critique of cost-benefit analysis as a guide to public policy, but only to pick on the specific problems that seem to be of special interest in relation to decisions about the finance of education. These fall into two very broad groups, concerned first with the nature and relevance for policy of the data utilised and secondly with the character of the distinction customarily made between the social and private benefits and costs of education provision.

a) *The data and their policy interpretation*

Attempts to measure the « pay-off » to investment in education customarily (necessarily ?) use the information derived from the education « market » (and by such associated markets as that for students' part-time labour) in assessing the relevant « costs », and measure returns by reference to the variations in lifetime earnings that are associated with education in particular forms. It would be churlish to criticise this procedure : the only statistics available to us are about the past. But we must recognise the problems that are inherent in the data.

The most general problem is that the data are derived from a particular system of education provision. While there is considerable disagreement about the proper role of government in education provision, there has for many years been widespread agreement that the education « market » must be expected to function « unsatis-

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1. We do not of course suggest that writers in the field would accept (or have used) so simple or unqualified a formulation, but only that it is a useful and not essentially misleading first description.

factorily » in the absence of some kind of public action. Consequently, in most countries the public authorities play a major role in education finance and/or provision. Thus, what is being measured in cost-benefit studies is at least in part the outcome of those policies. The results would be likely to change if the public policies were changed, and if cost-benefit studies are to guide education policy, and particularly its finance, means must be found to separate the influence of size (so that we could predict, for example, the consequence of devoting more resources to education within the existing framework of provision), and the influence of *method,* so that we could predict the effects on investment in education of specified changes in the organisation (including finance) of the education « industry ».

The possible importance of changes in the character of the education « market » can be illustrated from the side of demand. Education is « demanded » by individuals, either for direct « consumption » or (by parents) for « consumption » by children. Thus, the role of the family is a crucial one in the education market. The family has manifest deficiencies as a decision-taker in this area, and it is plausible to expect some correlation between the extent of these deficiencies and the amount of education received by the parents. There must consequently be a complex relation between the data of returns to education, the efficiency of the family as a decision-making unit, and the past history of education and other policies affecting the competence of parents. How are we to decide the respective influence of methods of education provision (which incorporate a specification of the role of the family in educational decision-taking and finance) and of the volume of resources historically devoted to education, on the measured rates of return ?

On the supply side, the rates of return to particular types and degrees of education must be influenced by the availability of the relevant resource-inputs. Thus, a difference in rates of return to « comparable » types of education might be interpreted (with a number of qualifications) as evidence of a need to alter the distribution of resources between uses. But the appropriate policy for this purpose must depend upon the reasons for the divergence : restrictions upon the entry of resources into the relevant (educational) sector, imperfection of access to finance for students, and so on. « Human investment » studies may perform the valuable function of drawing attention to the divergence, but by themselves they cannot indicate the appropriate policy. They reveal the symptoms but give incomplete information about the disease.

We turn now to a rather different though not independent problem. This concerns related types of investment in human beings. The most popular illustration is that of health. Improvement in the health of the working population may increase productivity, and this in turn will increase the « pay-off » to investment in skills (education). To some extent, this problem can be dealt with conceptually by treating good health not as an end but simply as a means, so that provision of medical facilities becomes one of the « costs » of obtaining a return on educational « investment ». This procedure may have some plausibility for investment in human capital undertaken by business enterprises with a view to specific profit, but it becomes increasingly unsatisfactory the more general the health inputs in question. Much « health-generating » activity cannot be specifically related to changes in individual productivity, nor is policy in the field of public health governed solely by income-generating motives. Yet there will be a different « pay-off » to education provision for each different level of « input » of such complementary resources as medical care[1], and it follows that to derive the policy implications from cost-benefit studies we must take this into account.

Finally, we return to the question of « psychic returns ». The « consumption » satisfaction obtained by individuals from education may be thought of as the sum of two components : enjoyment of the education process *per se,* and enjoyment of the results of the education process, i.e., achievement of a higher level of « ophelimity » over one's lifetime because of having been educated in a particular way during some part of it. Both components raise awkward problems. The first may be negative for those educated as for the « Huck Finns », and it is implausible to suggest that the relevant satisfactions are those of the decision-takers who force them to attend school. Interpreting the second component involves us in problems of inter-personal and inter-temporal comparisons of utility of a particularly difficult kind. How can a man say what pleasures he « would have got » from life if he had been differently educated, given that one characteristic of education is to change the « consumer's » conception to what constitutes enjoyment ?[2]

We do not wish to pursue this set of paradoxes beyond their implications for methods of finance. In that context, their importance is that public policy in the finance of education, by determining how educational decisions shall be taken, effectively decides also how psychic returns to education shall be evaluated, and in doing so decides the weight given to the provision of education as a consumption good.

In sum, the argument so far suggests that there can be no obvious or simple way to translate statistical studies of education as an investment into policy prescriptions regarding methods of finance. Specifically, it can never be easy to use such studies to predict the consequences (and relative merits) of changes in the volume of education and (« market-improving ») changes in the methods of financial provision respectively.

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[1] It is to be noted that we say nothing about changes in methods of access to medical care, which equally might affect the measured returns to education by influencing various social groups differently in their consumption of health resources.

[2] An illustration is provided by the hoary old paradox about musical appreciation. Does a man who has always enjoyed Beethoven necessarily enhance his pleasure by taking a course in musical appreciation ? He may improve his understanding, but that is not the same thing. We cannot take his word for the result, since there is no reason why he should be able to compare his *ex ante* and *ex post* states. Nor can we argue that his satisfactions are enhanced simply from the evidence that he took the course, because this would be to assert *inter alia* that expectations can never be disappointed. Finally, there is no reason to suppose that any information we might obtain about one individual can be applied to others.

b) *Social and Private Benefits and Costs*

The general nature of the social/private distinction is well-known. The gains and losses to society from any one individual being educated are not identical with the gains and losses accruing from the education to the individual himself. The precise implications of the distinction are perhaps less universally recognised. It is possible to distinguish at least three types of social/private divergence, each of which has been adopted by one writer or another, and each of which has different implications for education policy.

i) *The « individual externality » case.* This is the most straightforward. The education of A confers benefits (or imposes costs) on B, so that B's income-stream is changed by A having been educated. While this educational illustration of the general case of external economies (or « spillover ») is easy to accept, it is more difficult to assess its significance, particularly since it is compounded with the other social/private divergencies yet to be discussed. Further, the valuation problems must at least be no less difficult if we wish to assess the value of « spillovers » resulting from proposed (marginal) policy changes rather than their actual total value in existing conditions of provision.

Ideally, we should like to know the values and costs for each individual of each other individual having been educated. This information could then be used to adjust the relevant data in order to obtain a « social » rate of return to educational investment. But even this information, could we get it, would provide an incomplete guide for determining methods of finance.

Let us assume (for purposes of illustration only) that it is considered desirable to require each individual to compensate those who confer spillover benefits upon him. How is the compensation to be assessed ? From B's point of view, the gain conferred on him by A is involuntary and outside his control : there can thus be no direct way of assessing its value to him and hence no unambiguous method of deciding the amount by which he should recompense A because the spillover exists[1]. The point is more than an intellectual quibble. If such spillovers are significant, and individuals have no means by which to obtain payment for them, then it can be argued that the education « market » must function imperfectly in the absence of public intervention. Thus the correction of « spillovers » can be regarded as one of the purposes of public policy in education finance, although its precise importance and implications must remain subject to argument in the absence of agreed methods of measuring the relevant magnitudes and the influence of particular methods of education finance, etc. upon them[2].

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[1] It might be thought that a « revealed preference » approach would show up B's valuations of given amounts of education for A. But since B cannot be excluded from enjoyment of the spillovers, he has no incentive to reveal his true preferences. If B *can* be excluded, then A could bill him, A and B would maximise their joint returns, and the externality problem would disappear.

[2] There is an interesting parallel case revealed in the spillover of benefits from one state within a federation and another as a result of the migration of

ii) *The « public good » benefit.* This differs (from (i) as it concerns « generalised » external benefits, i.e. the benefit to the community as a whole from A's education is greater than (or different from) the benefit to A, but there is no direct fashion by which the additional benefit now being considered can be imputed to individuals. This is perhaps most easily understood by economists as a special manifestation of the Wicksell-Musgrave « public good » problem. The availability of general education, it is argued, confers universal economic benefits. For example, literacy improves communications that are shared by all, but because they are consumed in common they are not governed by the principle of exclusion. In the same fashion that A's « consumption » of national defence does not affect the level of protection afforded to B (since the level must be the same for all), so A's benefit from the available « pool of knowledge » can be argued to be unaffected by the availability of the same pool to B.

The problems of valuation in this case are even more intractable than in case (i). There is indeed scope for argument not only about the significance of this type of benefit but even about its very existence. To the extent that the indivisible benefits of education are believed significant, they provide a reinforcement of the argument for public action to influence resource allocation in education. But it is another matter to reach agreement as to how much and what type of intervention is « optimal ».

In fact, (i) and (ii) considered together invite the conclusion that the education « market » may function imperfectly in the absence of public intervention, but that there are tremendous problems to be faced in imputing values to the social/private divergencies described, and even further problems in relating these divergencies to decisions about financing education. How do we decide, for example, whether the most appropriate form of public intervention in the education « market » (given that intervention has been agreed to be necessary) is public provision of the service on the one hand, or some form of financial reinforcement of private provision on the other ?

iii) *Community benefit.* The community may also be argued to benefit from the education of its citizens, apart from the direct benefit to those citizens as individuals, because such education improves the general « character » of society and the « quality » of economic and social decisions. The most directly « economic » form of this argument is that put forward by Musgrave[1]. This suggests that education be treated as a « merit want », a use of resources about whose attributes the informed (better educated) are more competent to judge then the uninformed (less educated). Consequently, the informed — in practice, the government — are justified in taking decisions about education on behalf of the community at

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educated manpower from one state to another. For a full discussion of this question, including its implications for federal-state financial relations, see Burton A. Weisbrod, *External Benefits of Public Education,* Princeton, 1964.

[1] See, R. A. Musgrave, *Theory of Public Finance,* 1959, pp. 13-15.

large. By doing so, they improve economic efficiency generally, since adequate education is a prerequisite for the efficient exercise of choice in economic matters.

The argument is appealing, but has some uncomfortable corollaries. Considered simply as an economic matter, it invites the question : how do we compare the « value » of education as a merit want and the « value » that individuals (educated or not) place upon their freedom of choice in educational matters ? The concept is clearly not easy to incorporate into a (statistical) study of education as an investment. Regarded more broadly, as perhaps it should be, the concept of merit wants embodies a political philosophy that of course cannot be supported on technical grounds and that many would find unacceptable. Musgrave himself distinguishes between merit wants and simple authoritarian decisions of government deriving from an organic view of the functions of the state. He finds the latter objectionable, but suggests no practicable means by which this type of authoritarianism might be distinguished from that which stems simply from the proposition that policy decisions about such matters as education should be reserved to the educated.

In any case, many who invoke this type of « social benefit », while aware of the possible (indirect) effects of their proposals on output, are explicitly concerned with other matters : a popular example of the type of « social improvement » that interests them is the improvement of democratic government by the assurance of an informed electorate. Indeed, it is the essence of this position that education is not a commodity like butter[1].

Be that as it may, the economist, if he is to treat this type of benefit as an economic matter at all, must have agreed means of imputing values to it — but of course there are none. Failing agreement about the nature of the « good society », there can be no agreement about the contribution of education and hence about particular methods of finance. For example, totalitarian regimes have commonly used the education system to indoctrinate the young with a particular view of society. Those who introduce such policies must clearly believe that they bring social benefits. Others need not accept this evaluation of them.

In fact, it is now apparent that the attempt to incorporate this last type of « social benefit » into studies of investment in human capital must make it impossible to maintain the simplist position that such studies are concerned solely with the relation between education and economic growth. They touch on much broader considerations that require explicit recognition.

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[1] Many would agree with Dr. Matthew Arnold who argued 100 years ago : « The mass of mankind know good butter from bad, and tainted meat from fresh, and the principle of supply and demand may, perhaps, be relied on to give us sound meat and butter. But the mass of mankind do not so well know what distinghuishes good teaching and training from bad ; they do not here know what they ought to demand, and therefore, the demand cannot be relied on to give us the right supply ». *A French Eton*, p. 44. We are indebted to Professor J. L. Mackie for this quotation.

EDUCATION, SOCIAL AIMS AND GROWTH

It has been the tenor of our argument so far that « human investment » studies provide valuable information about the economic implications of education provision, but are not easy to translate into agreed or unambiguous formulae for education finance. The final step in this argument concerned the widest formulation of the « social benefit » aspect of education provision. This in our view introduces into the problem aspects of education that lie outside the technical competence of economists, but we are bound to give them at least passing mention. There is no reason to expect economists to agree about the nature of the good society, any more than we would expect other people to : and in the absence of such agreement there is no way to impute « values » to the social implications of education provision.

This is not to say that there is nothing to be done, or that the economist's technical contribution should have no weight in decisions about methods of educational finance : far from it. Rather we need to recognise the existence and importance of extra-economic policy objectives, and treat them as constraints in the conversion of our technical constructs into policy statements. Thus, we might specify the social objectives that we believe relevant, and explain the attitude to them that underlies our specific proposals for the finance of education. Or we can consider particular policy proposals and try to bring out their implications for relevant social objectives. In either case, we need to make the nature of our personal value judgments clear. But both procedures are easier to describe than they are to follow. For example, those who object to relating decisions about education to the wishes of parents may do so on technical grounds (because they believe parents choose incompetently), or on the ground that a relevant social objective of education policy is the protection of the child from its parents. Such arguments are frequently advanced simultaneously, and it is not easy to disentangle them or to weigh them one against another. Again, particular measures may be approved or objected to because of their expected impact on « social cohesion » or « social class ». Again, while « social cohesion » might be something we would all favour in principle, this is probably true primarily because the concept is vague. The difficulties multiply when we try to give it some kind of objective content, so that it might be possible to say in some meaningful fashion that a particular measure has or would « increase » or « decrease » such cohesion.[1]

Nevertheless, if the economist is to contribute to policymaking about the finance of education, he must recognise these problems for what they are, and try to distinguish in as explicit a fashion as possible between technical propositions, technical presumptions in need of further verification, (such as the existence and significance of « spillovers ») and the weight given to and interpretations placed upon the extra-economic objectives that are considered significant. This necessary separation of ends and means would be helped by further information about and understanding of the education « market ». We suggest in conclusion some ways in which this further illumination might be sought.

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[1] In Britain, a common objection to giving parents a greater voice in education provision is that it would result in the establishment of schools by (religious, etc.) groups whose « divisive » teachings would destroy « social cohesion ». In the USA there is a bitter debate as to whether prayers in public schools are essential to social unity or are themselves divisive. In Canada, the Quebec Provincial Government discourages financial assistance to students from the Federal Government on grounds not implausibly described as concerned in part with « social cohesion » in Quebec, but other provinces appear to have no such doubts about Federal aid.

PROPOSALS AND SUGGESTIONS

If we look at education policy as a matter of current resource-allocation designed to conform to a policy of growth, then the education «market» is required to give answers to three kinds of questions:

a) who is to be educated and in what fashion ?
b) how are the relevant resources to be made available, and directed to the appropriate sectors of the education « industry » ? and
c) who is to bear the cost ?

The answers can be provided in three broad fashions, involving increasing degrees of public participation.

a) The « market » might be left to individual decisions and finance, public action being restricted to such « corrections » of the market environment (e.g. by the use of tax policies to adjust « spillovers ») as the earlier discussion (and the facts of the individual case so far as they can be established) suggests to be necessary.

b) Public intervention might fo further than this, to incorporate more generalised « benefits » of education that individuals cannot be expected to take into account. Intervention on this additional count will necessarily be more far-reaching than at *a)* and is more likely to be based of necessity upon hunches than upon concrete information, given the problems of assessment that we have indicated. But we have found no reason to suppose that emphasis upon these broader benefits must lead to the displacement by public provision of private family and individual decisions, (rather than to the devising of grant-and-loan schemes designed to be implemented by decisions taken through the family or by the individual student).

c) Educational resources may be made available primarily by the public authorities, whether for technical reasons (such as the incompetence of families) or because of the view taken of the extra-economic objectives of education and their relation to particular types of public policy.

Clearly, choice between these procedures involves both technical problems (for we need to be able to predict the results of particular approaches and/or changes) and attitudes to ends. The « conventional wisdom » has come to accept the third procedure, with perhaps some concessions to the second,[1] as the one relevant to education policies directed towards the fostering of economic growth. Apart from discomfort about any policy propositions that relate policy to one specific or over-riding end, we can find no adequate technical support for such a view. Indeed, the « conventional wisdom » does not normally stem from any serious attempt to relate different methods of education finance to the growth process, but depends in the end upon a set of value judgments about the relation of the education process to other social goals which are allowed to « set the stage » for policy discussion by default rather than by reasoned argument. We have already made it clear that we would regard the articulation and further elucidation of the relevant social objectives as a first requisite of efficient communication about education policy. But this is not to assert that we ourselves know what the « right » social goals are, although of course we have opinions about them. Our concern here is with a technical question : useful discussion of policies of educational finance must rest upon prior understanding of the judgments of value being made about other social goals.

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[1] For evidence, at least in respect of higher education, see *Economics of Higher Education* (ed. Seymour Harris) OECD, Paris, 1964, esp. pp. 41-46 and p. 162.

We have already indicated the difficulties in the way of using « human investment » studies to specify appropriate finance, etc. policies. It is possible, however, to raise some questions as to the underlying assumptions of the « conventional wisdom » :

a) In other contexts, economists commonly emphasize the importance of innovation and adaptability to change as elements in fostering growth. It is one indication of an efficient « market structure » that it provides adequate incentives for these activities. Given the common objections to monopoly of supply, however, the onus would seem to be on those who advocate nationalisation, or even a predominantly public education system, to show why it might be expected to be superior to a less centralised system in which parental choice was more fully exercised. But we have little factual knowledge of the behaviour of different « market structures » in education, and this is clearly an area in which much fruitful research could be carried out.

b) Another reason for questioning the validity of the « conventional wisdom » is the fact that in no country outside the Communist world is education entirely the preserve of the state. Private facilities grow up not only in competition with state education (despite the competitive disabilities frequently imposed upon private provision), but also in a fashion complementary to it. The flexibility and adaptability lacking in the state system appears to be mitigated at least in some instances by the clustering of private facilities around the weak spots. In Britain, for example, clerical education for women has for a long time been a flourishing field for private initiative simply because the state system has until recently been unwilling to accept that the skills in question, though plainly valuable, were a part of education. Pounding a piano keyboard is educational, but pounding a typewriter keyboard is merely productive. This continuous peripheral growth of private facilities should make us pause before we accept without question that the role of education in a policy of accelerated growth is simply a matter of extending public supply.

Once again, we have need for much more information, both as to the validity and significance of this piece of casual empiricism and as to its implications for the « efficiency » of particular methods of education provision. For example, we have very little comparative material at all on the overall « market structure » in different countries, of a kind that might help in forming judgments about this matter.

These suggestions are two of many, but they need following up if economists are to contribute more fruitfully to policy decisions about education finance. As a beginning, our doubts about the « conventional wisdom » would suggest that considerable changes might be made in the kind of information sought about the education system before any attempt is made to relate projections of educational requirements for growth to methods of finance. We suspect that the scope of the « education industry », which has to be fitted into the input-output matrix commonly used for projection purposes is much wider than is commonly believed.

Thus it would be useful to have answers to the following sorts of questions :

- How many pupils at particular levels attend publicly- and privately-provided institutions respectively ?
- How is finance for the two groups of institutions provided ? (e.g. proportion of fees and grants : conditions on which grants are provided, methods and extent of local and central political control over education expenditure).
- Do public tax and subsidy policies take any account of education ? (e.g. by tax relief for private spending on education, covenants, family allowances etc.).
- Do policies for education finance make any attempt to distinguish the private and the community benefit from education ? (e.g. by using loans rather than grants for that part of the benefit considered to be personnal).
- Is any attempt made to use finance as a means of directing education towards the stimulation of economic growth ? (e.g. by deliberate subsidisation of particular types of study.) If so, what (implicit or explicit) assumptions about the growth process lie behind the policies ?
- What measures, if any, are taken to educate parents and students concerning the education « market » itself ?
- What choice of education (school, etc.) do parents have when schools are publicly provided ?

Availability of such information (which is of the same general kind as that suggested in Dr. Edding's outline), might help by enabling comparison of relative methods of finance alongside growth rates, etc. But our earlier discussion suggests that it would be foolish to expect too much. The dangers of implicit theorising are manifest. Ideally, we need to know for each country not only how the present education system fits into the existing economic structure, but how that structure *as a whole* would be affected by specified marginal changes. But if we adopt the linearity assumptions common in such exercises, we have in fact reduced the question of methods of finance to triviality. If they have any importance, it is because different methods have different characteristics at the margin.

Further, even if international comparisons were agreed to support a clear inference that particular countries would be likely to stimulate growth by changes in their *methods* of educational finance, the policy problem would not be resolved, for, as we have repreatedly emphasised, such changes would be unlikely to affect only growth. If the social environment is also affected, in ways that people think important, who is to say that growth must be preferred ? Whatever the outcome of our statistical exercise, the most the economist can hope to do is to clarify the implications of decisions about finance for policy objectives, and to be patient in trying to set out his own views of social goals in a fashion that makes reasoned discussion possible.

Chapter 7

PUBLIC EXPENDITURES ON EDUCATION

by

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INTRODUCTION : THE MAJOR ISSUES*

In this essay, I have tried primarily to analyse available statistical material on public expenditure on education. This material is not all it might be. Many of the official publications indicate the reservations which should be made, for example the UNESCO Publications *Manual of Educational Statistics 1961* and the three-volume *Public Expenditures on Education 1956*. Nevertheless, the statistics permit some broad generalisations. This introductory section summarises some of the main questions considered.

The amount of public expenditure on education is determined by the number of young people of school or college age and the proportion attending school or college. This proportion depends on the general standard of living, the geographical distribution of schools and colleges, attitudes towards education, the availability of private resources, manpower needs and the unit costs of education. These, in turn, are related to standards, productivity, the size of the country and of the population groups at each administrative level. In the United States, unit costs tend to be high, *ceteris paribus,* when the population is small, e.g. in the Mountain States. Similarly, one might expect high unit costs in such countries as Greece, Austria, Portugal. The fact that their expenditures on education in relation to income are low, despite their small populations, indicates an even lower standard of education than do the figures themselves. Whereas in the poorer states in the United States expenditure on education is high in relation to personal income, the outlays in the poorer countries of Europe tend to be low.

As a general rule countries with a high per capita income tend to spend a relatively large proportion of their GNP on education, as shown by an examination of expenditure on education in relation to per capita income in 14 countries, and also by the ratio of expenditure to GNP in the United States over a number of years as economic standards have risen. But there are some exceptions (as we shall see) to this rule, and some countries are out of line in their public education expenditures in relation to income per capita.

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* I am greatly indebted to Dr. Hans Peter Widmaier who discovered, compiled, and copied tables without which this paper could not have been written. He should not, however, be held responsible for my analysis. Mrs. Lucille Reifman, Secretary of the OECD Study Group in the Economics of Education, has also helped in many ways.

102

Expenditure on education is apparently encouraged when real income rises in periods of relative price stability, if we may judge by the large increases in the 1920's and 1950's, and the decline in the 1940's. There is a lag in the response of expenditure to rising prices (the decline in the real wages of teachers in the 1940's is evidence of this). It would be a mistake, however, to assume that educational expenditures are relatively stagnant in periods of heavy inflation, for there has been little evidence to support this assumption in countries where inflation has been heaviest. This may, however, be explained by the low level of educational expenditure at which they started.

An examination of the trend in the ratio of public expenditures on education as a percentage of national income or GNP reveals a general upward movement in the twenty years or so from 1937 to the late 1950's. This trend is more than satisfactory for Great Britain, France and Italy — the first two relatively rich countries — and less than satisfactory for Germany. The large demands for education and an awareness of the relationship between education and growth may explain the trends in the first three countries, and satisfaction with the growth achieved, despite the small educational expansion, in Germany.

The extent to which the responsibility for financing education falls on the various levels of government provides some explanation for these differences in expenditure. Where most of the country's revenues are appropriated by the Central Government, and where large regional differences in economic resources exist, a strong case can be made for financing education by the Central Government. Yet in the United States and Germany, where these conditions prevail, the contribution of the Central Government is very small ; and in such poor countries as Ireland, Portugal, Austria, Spain and Italy, the financing by the Central Government is surprisingly high. Of the wealthy countries, the Central Governments in the United Kingdom, France, and the Netherlands assume particularly heavy responsibilities. The trend in recent years is not too clear, although expenditure by Central Governments appears to be rising slightly.

Enrolment in relation to the corresponding age group is highest for ages 5-14, next for 15-19, and lowest for 20-24, but the differences among countries are narrowing, especially for the higher age groups. Thus enrolment for the 20-24 age groups for Canada and the United States should rise from 1958 to 1970 (optimistic projection) by 33 per cent, and for the Mediterranean countries by 55 per cent.

A comparison of expenditure on education from 1958 to 1970 (high alternative projection) is presented in the body of this paper. We have noted the trend of expenditures for the three age groups in each country, and tried to explain them. In general, the increases in expenditure on education are greater the more the population is expected to increase, the more the student/population (S/P) ratio and the teacher/student (T/S) ratio go up, and the larger the increase in the nations productivity. The last is assumed to be shown by the increase in expenditure in relation to the rise in the number of teachers, i.e. as general productivity and wages rise, such increases are reflected in higher pay for teachers.

A brief indication of the important factors contributing to the increase in public expenditures from 1958 to 1970 for the OECD countries is given by the following table of ratios (e.g. the S/P ratio of 19/15 for age group 5-14 indicates an increase of 19 per cent in the number of students and of 15 per cent in the population) :

AGE	5-14	15-19	20-24	5-24
S/P (Student/Population)	19/15	84/26	102/29	31/21
T/S (Teacher/Student)	34/19	88/84	105/102	50/31
E/T (Expenditure/No. of teachers)	66/34	131/88	161/105	97/50

For the age group 5-24, the anticipated increase (high alternative projection) for the period 1958 to 1970 was :

	INCREASE *By per cent.*
Population	21
Students	31
Teachers	50
Expenditures	97

These figures show a relatively large rise in productivity as measured by the ratio 97 to 50, i.e. a rise of almost 100 per cent, although the OECD's anticipated increase in productivity for the 1960's is much below this figure.

As might be expected, the percentage of the total educational expenditure for each of the different age groups changes over the years :

	1958-1970 *% of Total.*
Age 5-14	—16
Age 15-19	+ 39
Age 20-24	+ 32

An examination of the relationship in 1958 between expenditure and enrolment, by age groups, shows that the ratio of expenditure to enrolment tends to rise for higher age groups, although at different rates by groups of countries. Thus for the OEEC countries, for age groups 5-14, 15-19, and 20-24, the ratio of expenditures to enrolment was 78, 219, and 505 respectively, and for the USSR, 82, 111, 333.

To what extent does the amount of education provided depend on the needs of the economy ? In some countries, e.g. France, serious attempts are made to study manpower needs, and from these to estimate the numbers to be educated at the different levels, and even to break down the total into types of training. In others (e.g. the United Kingdom), there is doubt that such estimates are valid over a period of (say) 20 years. The British prefer to estimate the numbers to be educated at each level, not on the basis of the economy's needs but rather of the demand for education by the students. The British do not consider that there will be an excess of highly trained men and women, but that an increased supply of educated manpower will induce a corresponding increase in the demand for it. Detailed projections of demand for manpower are made difficult by : the uncertainties of productivity trends ; the rewards that will be available and hence the response of supply ; the relationship between numbers available and numbers trained ; the structure of industry, and international competition.

Almost every country is concerned about the shortage of scientists. We shall consider the proportion of students who begin science studies in IHL (Institutes of Higher Learning) and compare enrolments, baccalaureates, graduates, etc. For various reasons, as we shall see, there is a shortage in the output of scientists in the United States, but there are questions concerning the definition of shortages. In the economist's language the existence of shortage is revealed by high rewards, a situation which is corrected by a rise in supply and consequent reduced demand. But the modest earnings of engineers suggest to George Stigler that scientists are not scarce, although we cannot be sure. The recently graduated engineer is a less well-trained man than his counterpart 10 or 20 years ago, so that for the same training salaries may be much higher.

A perplexing problem is the supply of teachers. This is partly a matter of finance, but also partly the image of the teacher in society. In periods when birth rates are much higher than that in which the generation of teachers was born, this problem is serious indeed, and particularly so when at the same time attendance at educational institutions rises greatly in relation to the numbers of corresponding age. In the 1950's one solution to the teacher shortage was to reduce standards. In a world of full employment, and with large overall shortages of highly educated manpower, the teaching shortage grows more disturbing. Competition from industry, private practice (e.g. in medicine), research and even government is reflected in serious shortages of teachers. In various ways — increased pay, economising of teachers' time through the use of assistants, later retirement, more independent work by students, fewer courses, larger classes, etc. — educational administrators try to deal with the problem of teacher shortage. The result may be rising productivity — but there is also the danger of a deterioration in standards.

A final problem is the rising enrolment in higher education. This, of course, is the major reason for the escalating trend of expenditures on education. By 1984, the proportion of the corresponding age groups in higher education in Western Europe may be equal to that in the United States in 1964. By that time, Western Europe should achieve a per capita income equal to that of the United States in 1964. Insofar as economic considerations are decisive the school and college population in Western Europe should soar. In fact, higher education enrolment in Great Britain may be at least twice as high as the Robbins Committee estimates for the early 1980's. But we must not overstress the economic determinants. Much depends on attitudes towards education, the extent of democratising influences, the structure of industry, and the quality and structure of government.

DETERMINANTS OF EXPENDITURES ON EDUCATION

The number of dollars, francs or lire, or the proportion of the real resources of a nation that goes into higher education depends upon many variables. Here are some of the relevant factors.

Expenditures are related to the income of the nation and especially the per capita income : the larger the surplus over what is needed to cover the essentials of life, the greater the proportion of income likely to be spent on higher education.

The amount spent on primary and secondary education is also relevant, both because earlier education is a stepping stone to higher education, and because the more spent on lower education, the less is available for higher education. We should not think of a fixed amount of resources available for education however ; even if more is spent on lower education, the resultant increased interest in higher education may result in larger expenditures for all education.

If more is spent on other services and goods, less is likely to be spent on education. Hitler's high spending on armaments resulted in smaller allocations for education. The great interest in roads stimulated by well-organised lobbies of road builders, automobile owners, etc., was one of the reasons for the inadequacy of the resources the Federal Government of the United States was prepared to put into education. In Great Britain, after the second World War, the need for housing and the enthusiasm for health expenditures and social security generally were bound to result in smaller increases in educational expenditure than would otherwise have occurred.

The amount spent on higher education also depends on the attitude of the people towards the extent of public involvement. When a nation taps private resources the result may well be more going into higher education, or a more reluctant attitude by government. In the United States about 40 per cent of the expenditures on higher education are for private education (although a significant percentage, about one-quarter, of these come from the government). Perhaps because of these large private contributions, total and per capita expenditures for third level education are proportionately higher in the United States. An examination of the relative contributions from public and private sources, however, shows that the availability of private funds tends to discourage public outlays. The states where private higher education is most developed — e.g. Massachusetts, New Jersey, New York, Pennsylvania, and Connecticut, are also those where public higher education has made the least progress. The recent ranking of public expenditures on higher education for 48 states in relation to numbers of college age population was as follows :

	Rank
Massachusetts	= 48
Pennsylvania	= 47
New Jersey	= 40
New York	= 36
Connecticut	= 33

The amount spent on higher education also depends on the cost per student ; productivity and the quality of the education provided will influence these costs. The high cost per student in third level education in Great Britain is a case in point. It is surprising to find that the cost per student is substantially higher in Great Britain than in the United States, in spite of the fact that per capita income is twice as high in the latter. The high teacher/student ratio and the relatively high salaries of professors in Great Britain are relevant factors.

In an economy where productivity is rising, (say 3 per cent a year as it has been doing in the United States over a long period) real income, that is, income corrected for price rises, should increase correspondingly. Any industry or service whose productivity does not increase at the same rate will be under a disadvantage. For example, education has to meet this competition and pay the same 3 per cent a year more for services and supplies, or else will experience an efflux of talent and (or) a depreciation in the quality of its product. Where Institutions of Higher Learning (IHL) have difficulty in obtaining additional revenue their ability to compete for resources may be adversely affected. If, in addition to this lag in productivity, IHL are also confronted with rising prices to which their revenues respond slowly, they will suffer from a double handicap. The decline of teachers' real wages in the war and early post-war period and the continued lag even as late as 1964 of college teachers' salaries behind those of other members of the labour market in general are relevant here. The problem is serious everywhere and particularly in the United States and the United Kingdom. This shortage of teachers is to some extent due to the lag in the rise of teachers' pay.

Variations in expenditures on higher education are partly due to differences in the definition of higher education. For example, part of the heavy expenditure on higher education in the United States results from the fact that third level education there includes 1-2 years of study which is given at a lower level in Western Europe. Again, the definition in Great Britain includes « further education », which consists largely of extension classes or correspondence courses. To a small extent this also holds for the United States, but Great Britain has a much larger proportion of « further education ».

Estimated manpower needs of various kinds also influence expenditure. Whether planning is in vogue or not, there is a tendency to provide higher education for more students to ensure the high-level manpower needed.

Ideological questions also influence the amount of expenditure on higher education. In some countries in Western Europe, eventual access to IHL is decided at an early age, a practice which is gradually being changed. In the United States, the view is gaining ground that all who can profit from it should have access to higher education. The time is not far off when 50 per cent of the college-age population will be in IHL with the Government assuming greater responsibilities for financing education and the needs of the student. In California, for example, virtually all Junior College (13th and 14th year) students and perhaps 90 per cent of university or four-year college students will soon be within commuting distance — and with no tuition fees. The problem of maintenance, with costs kept down by proximity to IHL, has not yet been fully solved, however.

INCOME AND EXPENDITURES ON EDUCATION

A safe generalisation is that the higher the per capita income of a country, the larger its expenditures on education in relation to its GNP.

The following table shows this relationship :

TABLE 1. GNP PER CAPITA AND EXPENDITURES ON EDUCATION AS PERCENTAGE OF GNP FOR 14 COUNTRIES

COUNTRY	GNP PER CAPITA 1960 *US Dollars* 1	RANK OF COL. 1 2	EXPENDITURES ON EDUCATION AS % OF GNP 1958 OR NEAREST YEAR 3	RANK OF COL. 3 4
United States	2,787	1	4.53	1
Sweden	1,631	2	4.14	3
Switzerland	1,579	3	2.88	9
Luxembourg	1,531	4	1.37	14
United Kingdom	1,493	5	3.67	4-5
Belgium	1,331	6	2.79	11-12
Denmark	1,300	7	3.01	8
France	1,276	8	3.50	6
Germany	1,263	9	2.79	11-12
Norway	1,236	10	3.67	4-5
Netherlands	978	11	4.23	2
Austria	802	12	2.85	10
Italy	629	13	3.42	7
Portugal	253	14	2.07	13

Source : Col. 1, US *Statistical Abstract*, 1963, Table 1245 ; Col. 3 from OECD *Policy Conference on Economic Growth and Investment in Education*, 1961, II, p. 93 ; the per capita income of Western Europe is understated, since purchasing power of European currencies is greater than indicated by exchange rates.

Of the 14 countries considered, the ranking is out of line for six. Educational expenditures are relatively low for Switzerland, Luxembourg and Belgium. These are small countries, for which unit costs tend to be high, so that educational expenditures in relation to GNP per capita might be expected to be high, whereas they are, in fact, relatively low. Great reliance on local government as well as a general dislike of central government activity are relevant explanations for

Switzerland, and to some extent Belgium. Religious differences and the greater prevalence of private education may also be a factor in Belgium. Luxembourg, which is a very small country, undoubtedly depends on others to provide some of the educational facilities for its youth. Private expenditure varies among the different countries, e.g. it is heavy in France and Belgium.

We pointed out above that Switzerland was out of line in her expenditure on education in relation to income. An examination of the material from the *Report of the Federal Expert Commission on Problems of Higher Education Development in Switzerland,* 1964, however, shows that some progress is being made in higher education[1].

TABLE 2. INDEX OF EXPENDITURES ON HIGHER EDUCATION IN SWITZERLAND IN 1962 (1950 = 100) : TOTAL EXPENDITURE, PER CAPITA, PER STUDENT, IN CURRENT SWISS FRANCS AND IN CONSTANT PRICES

Total expenditures	291
Total expenditures, adjusted to cost of living	237
Per capita expenditure	253
Per capita expenditure, adjusted to cost of living	206
Per student expenditures	187
Per student expenditures, adjusted to cost of living	152

The more important IHL are financed primarily by the University-Cantons : generally 80-90 per cent of the funds come from this source. Fees represent from 4 to 10 per cent, and donations, interest, and contracts most of the remainder. One institute (Federal Institute of Technology) is supported almost entirely by the Federal Government. In 1958-62, net expenditures for higher education per capita mounted to 32.7 Swiss Francs and the University-Cantons spent 9.7 per cent of their income on higher education.

Norway, the Netherlands, and Italy are also ranked out of line with per capita GNP, but their expenditure is unexpectedly large, not small. For the first two, numbers of students, the small size of IHL and hence high costs, as well as a receptiveness to governmental action and planning to meet manpower needs provide some explanation for this situation.

A combination of unusual interest in education (sparked by an early conviction that education pays) and a strong central government give rise to relatively heavy expenditures on education. Thus the USSR in the late 1950's devoted 3.74 per cent of its GNP to education, as compared with 3.21 per cent for the OEEC area. Yet both the total income and a fortiori the per capita income in the USSR were less than those of the OEEC area.

The following figures provide additional confirmation of our statement that the higher the per capita income, the larger the expenditures on education in relation to GNP :

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[1] I am indebted to H.P. Widmaier for putting this material at my disposal.

TABLE 3. EXPENDITURES ON PUBLIC SCHOOLS, USA, AS PERCENTAGE OF GNP

1929-30 . . . . = 2.43
1958-59 . . . . = 3.05
1969-70 (estimate) . . . = 3.57

Expenditure on public schools in the United States was more than 70 times higher in 1960 than in 1900, while national income was less than 20 times higher. For higher education, the statistics are even more striking : the educational and general income of IHL was 178 times higher in 1960 than in 1890, and GNP only 53 times higher.

But despite the extraordinary progress made by IHL, on a per capita basis the increase is disappointing : 7 times as much for income per student and 17 times for GNP per capita. In other words, the increase in expenditure on higher education was less than that in the level of the economy[1].

In his very valuable study[2], Professor Edding finds a high correlation between educational expenditure and income.

> In order to verify the close correlation between education expenditure and national income (net national income at factor cost) eighteen countries were selected, in which the definition of school expenditure was not too strongly divergent. Whether their national income or their education expenditure is taken as a measure, these countries range, in almost the same order, from India spending around $ 0.50 per capita on education to the United States spending much more than a hundred times this amount. The correlation co-efficient is + 0.992 in 1954 and + 0.984 in 1950 and + 0.949 for twelve countries in 1938.

Edding finds that the poorer, that is, the less-developed countries, tend to spend very little, in relation to their small incomes, on education ; but Japan and the USSR spend relatively much more than might be expected. The author also finds that among the most industrially advanced countries the ratio of educational expenditures to national income increased from 1-2 per cent in 1900 to 4-5 per cent in 1950. Among the reasons for this increase are : a rise in population, an increase in the number of days in the school year, and a reduction in the pupil/teacher ratio.

Public school expenditures in the United States rose from $ 63 million in 1869-70 to almost $ 11 billion in 1955-56 ; from 1958-59 to 1970, I estimate a further increase of $ 11 billion, that is, from $ 14 to $ 25 billion.

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[1] Based on HEW *Statistics of State School Systems*, Various Issues, US Dept of Commerce, *Historical Statistics of the United States*, 1789-1945, *Economic Report of the President*, 1960 ; HEW *Financial Statistics of Higher Education*, Various Issues.

[2] F. Edding, *Internationale Tendenzen in der Entwicklung der Ausgaben für Schulen und Hochschulen*, 1958, especially p. 159-163 and appendix.

TABLE 4. BREAKDOWN OF THE RISE IN COSTS : 1958/9-70

	$ billions
Increase in enrolment of 8 million	3.2
Additional construction costs	1.0
Teaching salaries — rise from $ 4,750 to $ 7,250 per teacher (an increase somewhat greater than the average income)	4.2
A rise in quality in addition to the increase in teachers' salaries	2.6
	$ 11.0

In my analysis for the period 1900 to 1956, I find the following explanations for the rising cost of public school education in the United States :

1. A doubling of enrolment ;
2. A large rise in the average daily attendance (160 per cent) ;
3. An increase in number of days of attendance — from 132 to 178 ;
4. A rise in prices and productivity. This was reflected for example, in a 12-fold average increase in the salaries of teaching staff. As the rise in prices was 3-fold, the real increase in salaries was more than 200 per cent ;
5. A rise in capital costs ;
6. An increase in the importance of auxiliary services, e.g. food and health. From 1930 to 1956 the increase in auxiliary expenditure was 9-fold, or from 7 per cent to 11 per cent of all expenditures ;
7. A rising proportion of enrolment in secondary education. In 1958-59 the average teaching costs per pupil in elementary schools were $ 153, and in secondary schools $ 243. The respective teacher/pupil ratios were : 1 : 30 and 1 : 21 and the difference in salaries was $ 535.

The decline in the student/teacher ratio is often exaggerated, a comparison of the rise in the number of teachers and pupils being misleading. In 1956, for example, the number of public-school teachers was 4 3/4 times greater than in 1870 in the United States, and enrolment 3 + times — indicating a substantial reduction in the S/T ratio. However, once allowance is made for the rise in average daily attendance — due partly to the increase in the number of days in the school term — the S/T ratio is found scarcely to decline at all, any advantage completely disappearing if the increased proportion of attendance to enrolment is taken into consideration. In other words the increase in the average daily attendance is more than that in the number of teachers[1].

Edding expresses some concern that educational expenditures may have reached saturation point :

> ... A comparative calculation reveals an unmistakable slowing down of expansion since the depression of the thirties. If the proportion of educational expenditures to national income

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[1] Statistics based on *Statistics of State School Systems, Organisation, Staff, Pupils, and Finance*, 1957-58, 1961 and other issues.

had risen at the same annual rate as in the period from 1913 to 1929, it would have been much higher around 1955 than it actually was... Only in recent years has this increase once again remarkably accelerated...[1]

TABLE 5. EXPENDITURES ON PUBLIC SCHOOLS IN THE UNITED STATES IN RELATION TO NATIONAL INCOME

1899-1900 . . . . . . =	1.0	1919-1920 . . . . . . =	1.8	1929-1930 . . . . . . =	2.8
1939-1940 . . . . . . =	3.0	1949-1950 . . . . . . =	2.5	1962-1963 . . . . . . =	3.3

Source : Based on calculations and adjustments of statistics in *Historical Statistics of the United States*, *Economic Reports of the President*, and issues of *Statistics of State School Systems*.

Undoubtedly the depression greatly reduced the ratio of educational expenditures in relation to income. But this ratio also fell in the 1940's, which was a period of great and rising prosperity. The explanation lies in part in the failure of educational expenditure to keep pace with inflation. There was a lag in the rise in teachers' salaries, and a delay in adjusting public expenditures generally to inflated prices. Education benefits above all in periods of economic progress unaccompanied by inflation. In the 1920's — a period of real progress not accompanied by inflation — the ratio of public school expenditures to national income rose by about 80 per cent and in the 1940's there was actually a decline of one-sixth in this ratio. From 1950 to 1963, the yearly increase in the rate of expenditure was roughly equal to that in the first 30 years of the century. This is a remarkable achievement if we consider that by 1950 attendance at elementary schools was almost 100 per cent and at secondary schools was very high. By 1949-50, 83.2 per cent of the population aged 5-17 were enrolled in public schools and by 1957-58 the figure had risen to only 83.5 per cent suggesting the approach to saturation. (Attendance at private schools is not included. In these eight years the public school population rose from 25.1 to 33.5 million, an increase in line with that of the population.)

Table 1 does not show a clear inverse relationship between the size of a country (or the degree of its poverty) and the expenditures on education. For example, because of their small size, and hence high unit costs, one might expect large expenditures on education in relation to GNP for Portugal or Austria, but this is not so.

Experience in the United States, however, shows a fairly close relationship between the size of the population and units costs. The states with a small population (which generally cover a large area) are those which spend a relatively large amount on education. In the late 1950's no fewer than 11 states paid more per capita for higher public education (in relation to per capita income) than California, namely Alaska, Arizona, Colorado, Mississippi, North Dakota, Montana, New Mexico, Oregon, Utah, Vermont, and Wyoming. These are generally states covering large areas but having small populations. Their average position, when ranked according to size of population, was about 40th out of 50[1]. Their average personal per capita income was $ 2,019, and the average for the nation as a whole $ 2,366[2] (only Colorado exceeded the national average and by a few dollars). These and other statistics suggest that relatively more is spent on education by the states with low per capita incomes.

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[1] *Op. cit.*, p. 160.

Further evidence also supports this view :

STATE EXPENDITURES ON HIGHER EDUCATION,
AS PER CENT OF PERSONAL INCOME, 1957

10 richest states	0.373	10 poorest states	0.800
12 states with largest population	0.453	12 states with smallest population	1.139

The statistics are similar for public lower education. In the early 1950's, expenditures on public schools as a percentage of personal income were as follows[3] :

12 richest states = 2.04 per cent
12 poorest states = 2.72 per cent

Further Statistical Analysis

a) *Trends in Public Expenditures on Education in Relation to National Income*

In the period 1937 to 1953, public expenditures on education as a percentage of national income tended to rise. In most of the OECD countries for which figures are available, the trend was definitely upward, although not for Canada, Ireland and the Netherlands however[4]. The fact that for a majority of the countries the percentage of public expenditures for education tended to rise in a period of substantial inflation, when on the whole public expenditures for welfare in real terms tended to lag behind, suggests the widespread desire to increase expenditure, both absolute and relative, for education. Up to 1953, France, Germany, Italy and Japan show the biggest increases in expenditure on education.

In the 1950's, the increase in educational expenditure in relation to income was much more striking than during the periods from 1937 to 1945-49 (average) and from 1937 to 1953. In a period of more than 10 years (1950-61), the percentage of current general government expenditures to GNP rose roughly by about 50 per cent in the United Kingdom, the United States, the Netherlands, and only about by one third in Germany. The rise was modest for Austria but, for a

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[1] Calculated NEA *Rankings of the States*, 1962.

[2] Per capita income from US *Survey of Current Business*, August, 1963.

[3] Source — see S.E. Harris, *More Resources for Education*, John Dewey Society Lecture, 1960, p. 58.

[4] Statistics adapted from UNESCO *Public Expenditures on Education*, 1955 (Table 6 here) and *Policy Conference on Economic Growth* ... 1961, II, p. 93.

TABLE 6. TOTAL PUBLIC EXPENDITURES ON EDUCATION AS PERCENTAGE OF NATIONAL INCOME, OECD MEMBER COUNTRIES, USSR AND JAPAN, FOR THE YEARS 1937, AVERAGE 1945 TO 1949, 1953 AND 1958 (OR NEAREST YEAR)

COUNTRY	1937	AVERAGE 1945 TO 1949	1953	1958 (OR NEAREST YEAR) [13]
Austria	...	1.6[1]	1.9	2.9
Belgium	...	...	2.6[2]*	2.8
Canada	3.7[3]	3.2	2.6[4]	3.7
Denmark	3.0	2.9	3.5[2]	3.0
France**	1.3	1.1[5]	2.3	3.5
Germany	1.7	3.6[6]	3.5[7-2]	2.8
Greece	—	—	—	1.4
Iceland	...	...	2.9[2]	2.5
Ireland	3.4	2.1	3.0	2.7
Italy	...	1.9	3.0	3.4
Luxembourg	...	1.7[8]	1.9	1.4
Netherlands	3.6	3.1[8]	...	4.2
Norway	3.2[9]	3.8[8]	2.7[2]	3.7
Portugal	1.4	1.4[1]	1.5	2.1
Spain**	...	0.9	0.8	1.6
Sweden	2.7	3.1	...	4.1
Switzerland	...	2.6[10]	...	2.9
Turkey	1.4	2.2[10]	...	2.1
UK[11]	2.6	2.7	3.0	3.7
USA	3.4	2.7[12]	...	4.5
Yugoslavia	2.1[9]	3.2[1]	2.4	2.6
Japan	3.5	4.7[8]	4.3[2]	—

1. 1947-1949 only.
2. 1952.
3. 1939.
4. 1951.
5. 1946, 1947 and 1949 only.
6. 1948 and 1949 only.
7. Including West Berlin.
8. 1946-1949 only.
9. 1938.
10. 1948 only.
11. Excluding expenditure on higher education for England and Wales.
12. 1945, 1947 and 1949 only.
13. 1958 data are based on *total* expenditures and include an estimate of private outlays as well. The ratio is computed using GNP rather than national income as the denominator.

** Expenditure by the Department of Education only (for the years 1937, average 1945-49 and 1953).

* Estimated.

Source : UNESCO, *Public Expenditure on Education*, ST/R/14(I), Paris, 1955, Table 3 ; 1958 = *Policy Conference on Economic Growth*, ... 1961, II, p. 93.

shorter period, 1956-1961, large for Denmark[1]. Not only did the relative growth in the United States, the United Kingdom, the Netherlands, and Denmark substantially exceed that of Germany, but their ratio of educational expenditure to GNP exceeded that of Germany's by an average of about 80 per cent (3.60 as against 2.05).

The last column of Table 6 ties expenditure to GNP, thus explaining the substantial differences which occur where comparison is made with national income. For example, the 1958 figures for the United States show educational expenditures as 4.5 per cent of GNP, although in relation to national income for that year the 4.5 per cent would become 5.44 per cent or about 20 per cent higher. This may explain some of the differences between the 1953 and 1958 columns.

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[1] I am indebted to Dr. Hans Peter Widmaier of OECD for compiling the necessary tables, from the OECD Questionnaire 1962-63. He should not however be held responsible for the analysis.

b) *Inflation and Public Expenditures on Education*

Theoretically, we should expect the increase in public expenditures to be relatively small in countries where there is inflation in view of the time required for public expenditure to adjust to inflated prices, and particularly when the government revenue comes mainly from fixed and property taxes.

Table 7 shows the percentage increase in public expenditures on education for the years 1937 to 1945-49 (average) and 1937 to 1953 (or nearest year) as well as these outlays adjusted for changes in the price level. Statistics are available for 14 OECD countries.

The rise in prices was out of line for several countries :

TABLE 7. PERCENTAGE RISE IN PUBLIC EXPENDITURE ON EDUCATION, 1937 TO 1945-49 (AVERAGE) AND 1937 TO 1953

COUNTRY	1937 TO 1945-49*		1937 TO 1953**	
	PERCENTAGE INCREASE IN CURRENT PRICES	PERCENTAGE INCREASE IN CONSTANT PRICES	PERCENTAGE INCREASE IN CURRENT PRICES	PERCENTAGE INCREASE IN CONSTANT PRICES
Austria	767	55	—	—
France	2,458	—	6,775	
Iceland	1,200	310	2,333	320
Italy	4,660	18	11,708	102
Luxembourg	270	25	521	70
Spain	159	— 35	464	— 2
Turkey	587	96	778	127

* Austria = 1948 and 1949 ; France = 1949 ; and Luxembourg and Turkey = 1946-49.

** Spain = 1935-1953.

Sources : Public Expenditure on Education, UNESCO, ST/R/14 (I) and (IIA), Paris, 1955-56 ; Tables 1, 2 and Country Tables in Part II.

On the whole, the rise in public expenditure on education in these seven countries was not greatly affected by their inflationary situation. Countries with heavy inflation seem to follow much the same path as the others, and, apart from Spain, no relatively large reduction appears to have been made.

c) *Other Relevant Variables Explaining Trends in Educational Expenditure*

Obviously, price movements alone do not explain the trends in educational expenditures, and such factors as attitudes towards education, manpower needs, the tax structure, the responsibilities for education among different levels of government, per capita income, attitudes towards government, and the contribution of private education all play a part. In general, when educational expenditure is small in relation to GNP, the tendency will be for it to rise relatively more.

A comparison of countries shows the following trends ; from 1958 (or nearest year) to 1970 (forecast) for educational expenditures as per cent of GNP[1] :

Countries whose ratio of educational expenditures to GNP was above the OECD average in 1958.

- Increase by 1970 estimated to be below average : 2
- Increase by 1970 estimated to be above average : 3 (United Kingdom, France, Italy)

Countries whose educational expenditures expressed as per cent of GNP were below the average for OEEC in 1958.

- Increase by 1970 estimated to be above average : 9
- Increase by 1970 estimated to be below average : 4 (Germany, Iceland, Yugoslavia and Greece)

The increase for one country (Portugal) is the same as the average.

It is surprising to find that the United Kingdom, France and Italy, whose educational expenditures were already above the average in 1958, anticipate that the increase by 1970 will still be above the average for the OEEC area. These are among the four largest countries in Western Europe. The reasons for these ambitious programmes in both France and the United Kingdom are the increasing awareness of these countries of the advantages to be gained from extending educational horizons and the fact that their per capita incomes are above the average for Western Europe. (Italy's per capita income is far below the average for Western Europe however.)

The most disappointing forecast is for Germany, whose per capita income is high but whose expenditure on public education is relatively low[2]. This is all the more surprising since her growth rate in the 1950's was 7.2 per cent against an average of 5.3 per cent for the European Economic Community, 4.2 per cent for France, and 2.7 per cent for the United Kingdom. It is perhaps the achievement of this high growth rate in spite of limited educational expansion which explains Germany's reluctance to embark on large educational programmes.

Of six countries which experienced relatively heavy inflation, five (Austria, Iceland, Luxembourg, Spain and Turkey) devoted a small, below-average percentage of GNP to expenditures on education in 1958 (or nearest year), but anticipated that the proportion would be higher than the average for the OEEC area as a whole in the

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[1] See original table in *Policy Conference on Economic Growth and Investment in Education,* II, p. 93, OECD.

[2] US *Statistical Abstract,* 1963, Tables 1242, 1245.

1960's. Apparently heavy inflation did not exclude these countries from anticipating increases in educational expenditures, or, since they were starting from a low level, they were likely to rise more steeply.

TABLE 8. CURRENT AND TOTAL EXPENDITURE ON EDUCATION IN RELATION TO GROSS NATIONAL PRODUCT BY COUNTRY

BASE YEAR[1] AND PROJECTIONS FOR 1970

High Alternative

Percentages.

COUNTRY	BASE YEAR		FORECAST 1970 HIGH	
	CURRENT EXPENDITURE	TOTAL EXPENDITURE	CURRENT EXPENDITURE	TOTAL EXPENDITURE
Sweden	3.35	4.14	3.91	4.69
Switzerland	2.46	2.88	3.44	4.13
Luxembourg	1.32	1.37	2.08	2.49
Belgium	2.63	2.79	3.67	4.40
United Kingdom	3.02	3.67	3.95	4.74
France	2.72	3.50	3.69	4.42
Denmark	2.46	3.01	3.22	3.87
Norway	2.79	3.67	3.70	4.44
Germany	2.11	2.79	2.68	3.21
Netherlands	3.48	4.23	4.07	4.89
Iceland	1.97	2.53	2.71	3.24
Austria	2.74	2.85	3.32	3.99
Ireland	2.46	2.72	2.97	3.56
Italy	3.21	3.42	4.45	5.35
Yugoslavia	2.00	2.60	2.59	3.11
Spain	1.40	1.57	2.08	2.50
Greece	1.27	1.41	1.41	1.69
Portugal	1.62	2.07	2.22	2.67
Turkey	1.73	2.05	2.38	2.85
OEEC area	2.63	3.21	3.37	4.04
Canada	3.39	3.72	4.06	4.87
United States	3.61	4.53	4.38	5.26
OECD area	3.25	4.01	4.00	4.80
Soviet Union	3.17	3.74	4.98	5.97

1. 1958 or nearest year.

Source : Policy Conference on Economic Growth and Investment in Education, Vol. II, OECD, Paris 1962, page 93.

Material is also available for the period 1937 to 1953 concerning public expenditures on education per inhabitant for stable currencies. In general, the results should be similar to those for total expenditures in stable currency except for variations in population growth. Of 12 countries for which statistics are available, the movement of expenditures per inhabitant in stable currency units did not follow the expected trend for :

Iceland — very large increase
Sweden — large increase
Turkey — large increase

Ireland — decrease
Spain — decrease
Netherlands — virtually unchanged.

Note that large increases occured in Iceland and Turkey despite heavy inflation.

For 1945-49 (average) to 1953, material is available for 15 countries. In Italy, Portugal, Spain, France, Germany and Yugoslavia, an unexpected increase occured. In Turkey and Iceland, there was a small decrease and in Norway, a small increase.

For the period 1945-49 (average) to 1953, those countries in which the expenditure per inhabitant on public education rose considerably also experienced rather more inflation than the OECD area as a whole, contrary to the view generally held that inflation tends to reduce *real* expenditures. Turkey and Iceland, however, the countries whose educational expenditures per inhabitant fell (between 1945-49 [average] and 1953), had suffered from heavy inflation.

I mentioned elsewhere that countries where the amount spent on public education in relation to GNP is above the average for the OEEC area anticipated a lower than OEEC average increase in the 1960's, and that those with a lower than average expenditure anticipated a higher than average increase.

Of the 11 countries whose averages are below that for the OEEC, only two anticipate lower than average increases in the 1960's, namely Germany and Yugoslavia.

Of the six countries whose expenditure was above the average in relation to GNP, four anticipated a lower than average increase, and two a higher than average, namely France and the United Kingdom. Of these six countries, in only one, France, had inflation been considerably above average. For all six countries together, experience suggests that the absence of out-of-line inflation has not seemed to hamper the growth of public educational outlays. I am not implying, however, that we should therefore seek inflationary policies.

d) *Expenditure and the Structure and Distribution of Responsibilities by Level of Government*[1]

The amount allocated to education in government budgets depends on the tax structure and on the distribution of responsibility among the different levels of governments. On the structures of taxes, little need be said here. Affluent societies tend to depend mainly on income and progressive taxes, which provide them with sufficiently large revenues to be able to spend generously on welfare programmes. The United States and the United Kingdom are the best examples of countries with high per capita incomes and progressive tax systems, although the British, hampered of late by unusually high income-tax rates, have tended to increase consumption taxes as their welfare budgets have risen[1].

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[1] Some details on the responsibilities of various levels of government, and notably for Canada, Germany, and the United States, Columbia, the United Kingdom, and the Netherlands will be found in UNESCO, *Manual of Educational Statistics*, 1961, pp. 219-223. The reader will also find there an excellent review of British allocation of expenditures by levels of government.

In the less-developed countries there is little recourse to heavy income and other direct taxes. It is not easy to depend primarily on such taxes in countries where an agricultural or mining economy dominates. Not even France or Italy have outstanding records in their recourse to income and corporation taxes.

For the financing of public education, OECD countries vary greatly in their dependence on central, state and local governments. In the early 1950's, France, Ireland, Italy, Portugal, Spain, the Netherlands, and the United Kingdom, in that order, depended essentially on central government, France financing 100 per cent of her needs through the central government, and the United Kingdom 65 per cent. One observer compares a central/local ratio of educational expenditures of 70 : 30 in the United Kingdom with a 57 : 43 ratio in Sweden[2]. Of these seven countries, Ireland, Portugal and Spain had modest public educational budgets, Italy's was average, and those of the United Kingdom, France and the Netherlands were relatively generous. Obviously excessive dependence on the central government may be costly, although the modest budgets of three of these countries may merely reflect a low economic status, in turn reflecting excessive dependence on central government.

Norway and the USSR are situated half way, as far as the proportion of public education financed by central government is concerned, and their achievements are good. Low down on the list are Germany and Yugoslavia, with poor records in public education, and the United States with a good record.

Germany and Yugoslavia stand out in their dependence on taxes levied by state or provinces, ...and have meagre programmes in public education. The United States and probably the USSR both depend considerably on state revenues and have generous public educational programmes.

The United States, the United Kingdom, Norway, Germany and Yugoslavia obtained from 1/3 to 1/2 of their educational finance from local revenues. The first three succeeded in achieving better-than-average public programmes, but those of the last two were more limited.

Where the economy is sufficiently advanced and the taxes paid to the central government are highly productive and progressive, there is much to be said for substantial contributions being made by the central government. The case for large aid programmes by the central government is especially strong in Germany and the United States. The situation is similar in Switzerland. Where there are large regional differences in economic capacity — as in France, the United Kingdom and the United States — the case for reliance on the central government is greatly strengthened. Thus in the United States in 1960, personal income per pupil enrolled in public schools varied from $ 16,459 in Delaware to $ 4,462 in Mississippi. Moreover, state aid to local governments varied greatly. In Delaware, the state paid 67 per cent of the bill ; in New Jersey, only 29 per cent[1].

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[1] F. Weaver, « Taxation and Redistribution in the United Kingdom », *The Review of Economics and Statistics*, August, 1950, pp. 201-215 ; A. T. Peacock, *The Economics of National Insurance*, 1952, pp. 67-73; and S. E. Harris, *The Economics of American Medicine*, 1964, Chapter 17.

[2] OECD, Document for Fifth Meeting of Directors and Representatives participating in EIP, *Comment by J.F. Embling*, 1964, p. 12. (DAS/EIP/64.5)

There are special reasons, however, for the smallness of the contributions made by the central authority in the federated type of government. In both Germany and the United States it was necessary, in order to form a union, to leave large responsibilities to the state and local governments. The Federal Government in the United States is gradually encroaching on the powers of the States under the pressure of depressions and wars, although after almost a hundred years of this movement it still spends only $ 2.2 billion out of a total of $ 20 billion for public education[2].

Only Germany, the United States and the USSR depend mainly on state governments and provinces. German experience suggests that heavy reliance on the intermediate type of government may not yield good results. The state governments do not have access to the high revenues of the central government, and without the latter to equalise resources, the result is inadequate funds and maldistribution. Moreover, state governments do not have the same strong interest in education as have local governments.

Germany, the Netherlands, Norway, the United Kingdom, the United States, Yugoslavia, and the USSR all depend to varying extents on local governments — that is, for from one-third to more than one-half of the total. Of these countries, Germany and Yugoslavia, which receive little help from their central governments, have the most restricted educational budgets.

For the 1950's, estimates of the contribution made by central governments to public education in relation to GNP show that in Austria and the United States[3] the percentages fell, in the United

TABLE 9. CENTRAL GOVERNMENT CURRENT EXPENDITURES ON PUBLIC EDUCATION AS PERCENTAGE OF GNP

COUNTRY	YEARS	END YEAR (IN %)
Austria	1957-61	2.11 to 1.99
Denmark	1958-61	.88 to 1.29
Germany (FR)	1950-61	.03 to .03
Sweden	1950-61	.70 to 1.20
United Kingdom	1950-61	.33 to .33
United States	1952-61	.26 to .12

Source : Country Replies to OECD Questionnaire 1962-63.

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[1] NEA, *Rankings of the States*, 1962, p. 35, and *Financing the Schools, 1960-1970*, p. 66.

[2] US House Document No. 159, *The Federal Government and Education*, 1963, p. 115.

[3] The decline of GI subsidies helps explain this reduction for the United States.

Kingdom and the Federal Republic of Germany the proportions remained unchanged and in Denmark and Sweden they rose considerably.

UNESCO has made a breakdown of the source of receipts for a number of countries for 1960 (in a few instances 1959 and 1961)[1]. I have reduced these to percentage figures. A comparison of these statistics with those for the early 1950's suggests the current distribution of recepts as well as trends. Included are data which were not in the original UNESCO study.

In spite of heavy reliance on central government, Austria's contribution to education (measured as a percentage of total public expenditure) is much below average. Canada's distribution of public funds follows roughly the same lines as that of the United States, and although her allocations to public education are not as high as those of the United States, they greatly exceed those of the OEEC area.

For Germany the trend is away from central and local towards state government. A reduction in the central government's contribution from 12 per cent in 1953 to 1 per cent in 1961 is puzzling but may perhaps be explained by the fact that the 1953 figure included municipal expenditures in Bremen, Hambourg and West Berlin.

Italy's structure of receipts points to a decline of the central government's contribution from 91 to 77 per cent, the appearance of the 3 per cent state contribution, and a large increase for local government from 9 to 20 per cent. Norway's distribution remains much the same. In Portugal, the central government assumes a rising share of the cost (87 to 90 percent), that of local government falling (12 to 6 per cent).

In Spain, the central government's contribution falls from 86 to 67 per cent ; this is explained mainly by the fact that the 1960 figures include 12 per cent from tuition fees, 6 per cent from gifts and endowments, and 9 per cent from other sources. If we exclude these items, then the share paid by the central government rises from 86 to 90 per cent, and that of local government falls from 12 to 7 per cent.

The United States shows a small rise in central government contribution to education and a larger one in local government. If endowments, gifts and fees are included (25 per cent in all), then the states' share declines from 38 to 27 per cent, and local governments' from 49 to 41 per cent.

For Yugoslavia, the states' contribution declines from 38 to 17 per cent and the local governments' rises from 54 to 77 per cent.

Of the countries for which comparative figures are available, the majority tended to allocate relatively more from the central and state government funds and less from those of local government. For the following 14 countries the figures from 1937 to 1953 show that the relative contribution of the central government increased for nine countries and declined for five.

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[1] UNESCO, Questionnaire STQ/58/64, Country Replies.

e) *Expenditures at Different Educational Levels*

In 1958 (or nearest year), the proportion of age group 5-14 attending school varied from 94 per cent in the Northern European countries to 66 per cent for the Mediterranean countries. Some considerable improvement might be expected for the latter and the Soviet Union. For age groups 15-19, the proportion at school varied from 64.3 per cent for Canada-United States to 12.3 per cent for the Mediterranean countries, and for age group 20-24, the figures were 11.7 per cent and 3.1 per cent respectively.

TABLE 10. PUBLIC EXPENDITURES ON EDUCATION, % BREAKDOWN BY SOURCE OF FUNDS, 1951-54, 1959-61

COUNTRY	YEAR	CENTRAL GOVERNMENT	STATE PROVINCE	LOCAL AUTHORITIES	TUITION FEES	OTHER RECEIPTS FROM PARENTS	GIFTS AND ENDOWMENT	OTHER
Austria[6]	1951-4	—	—	—				
	1961	65	5	23				7[3]
Canada	1951-4	—	—	—				
	1960[7]	7	42	39		7	1	4
Germany	1952	12[1]	53	36				
	1961[6]	1	63	30	1			4[8]
Ireland	1954	—	—	—				
	1960	94	—	6				
Italy	1954	91		9				
	1960	77	3	20				
Netherlands	1951	66	—	34				
	1960	73	1	26				
Norway	1952	41	56					3
	1960[6]	44	56[2]					
Portugal	1952	87	1	12				
	1960[6]	90	4	6				
Spain	1953	86	2	12				
	1960[7]	67	2	5	12		6	9
United Kingdom	1953[4]	65	—	34				1
	1960	—	—	—				
USSR	1953	30	56[9]	—				14
	1960	—	—	—				
United States	1951	7	38	55				
	1959[2, 6]	9	37	54				
	1959[3, 6]	7	27	41				25
Yugoslavia	1952	8	38	54				
	1960[6]	—	17	77			6	

Source : 1951-54 UNESCO, *Public Expenditures on Education*, Paris 1955, Table 16.
1959-61 UNESCO, Country Replies to UNESCO Questionnaire ST/Q/58/64

1. Includes local expenditures of Bremen, Hambourg, and West Berlin.
2. Exclusive of tuition fees, endowments, etc.
3. Inclusive of tuition fees, endowments, etc.
4. Excludes Northern Ireland.
5. Includes tuition fees, gifts, etc.
6. Actual budgets.
7. Estimated budgets.
8. Includes DM 53 million income from rents and DM 348 million income from loans, the latter concerns local government only.
9. Expenditures by Republics and local authorities.

TABLE 11. ENROLMENT RATIOS FOR VARIOUS AGE GROUPS BY GROUPS OF COUNTRIES, 1958 OR NEAREST YEAR

AREA	5-14	15-19	20-24	5-24
Northern countries[1]	94.0	20.6	5.0	[illegible]
France - Benelux	89.7	31.3	4.2	[illegible]
Austria, Germany, Switzerland	80.6	17.4	4.4	43.3
Mediterranean countries[2]	66.0	12.3	3.1	36.5
OEEC Area	78.5	17.6	3.8	45.6
Canada - United States	89.7	64.3	11.7	69.2
OECD Area[3]	83.0	33.3	6.3	54.2
Soviet Union[4]	71.5	48.6	8.2	49.1

1. Denmark, Iceland, Ireland, Norway, Sweden, United Kingdom.
2. Greece, Italy, Portugal, Spain, Turkey, Yugoslavia.
3. OEEC plus Canada-United States.
4. Includes correspondence and extension courses.

Source : *Policy Conference on Economic Growth and Investment in Education,* Washington, OECD 1961, II, p. 71.

Projections for 1970 reflect the variation prevailing in late 1958, that is to say, the enrolment ratios tend to rise more for the areas with the lowest figures.

TABLE 12. ESTIMATED INCREASE IN ENROLMENTS 1958-1970 AS PERCENTAGE OF AGE GROUP POPULATION (HIGH ESTIMATE)

AREA	AGE 5-14	AGE 15-19	AGE 20-24	AGE 5-24
Northern countries	94.0 to 95.0			
Mediterranean countries . .	66.0 to 75.0			
Soviet Union	71.5 to 80			
Canada - United States . . .		64.3 to 73.1		
Mediterranean countries . .		12.3 to 24.1		
Canada - United States . . .			11.7 to 15.6	
Mediterranean countries . .			33.1 to 4.8	
Canada - United States . . .				62.9 to 68.9
Mediterranean countries . .				36.5 to 45.3

Source : Adapted from *Ibid.*, p. 87.

f) *Enrolment, by Age Groups and Economic Status*

In general, educational enrolment varies with economic status, i.e. the higher the GNP per capita, the higher the ratio of enrolment to numbers in the corresponding age group. Important exceptions exist for individual countries, however[1], for :

Age group 5-14

The exceptions to the general rule are relatively minor for this age group. Enrolment is notably higher than indicated by per capita income in Ireland, United Kingdom, Belgium, France (in that order). Enrolment is notably lower than indicated by per capita income in Turkey, Portugal, USSR, Iceland, Luxembourg, Norway and Denmark (in that order).

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[1] See *Ibid.*, Diagram 5.

Age group 15-19

There are more exceptions than for age group 5-14. Enrolments are very high in Iceland, USSR, Norway, Netherlands. Enrolments are very low in Turkey, Austria, Germany, Denmark, United Kingdom.

Age group 20-24

Exceptions (on the basis of income levels) are surprisingly fewer than for ages 15-19. Enrolments are very high in Norway, Sweden, USSR, Iceland ; enrolments are very low in Switzerland, France, United Kingdom. (Although enrolment is high in the United States, the total is somewhat lower than what might be expected on the basis of income.)

The ratio of enrolment to population of corresponding age for each year between 15 and 24 is at least twice as high in the United States as the average for Belgium, France, Germany, the Netherlands and Norway except for ages 15 and 16[1].

The size of enrolment varies with changes in the size of population of corresponding age. When enrolment rises more than the corresponding population, the inference is that educational achievement is on the increase. Since enrolment for the 5-14 age group is high in relation to the population of corresponding age, any increase is likely to be relatively smaller than for the 15-19 age group. For the 20-24 age group the relative increase is even greater than for the 15-19 age group.

For the 5-14 age group the anticipated increase in enrolment between 1958 (or nearest year) and 1970 is biggest for Turkey, Yugoslavia, the USSR, Portugal and Spain, all countries with comparatively low enrolment figures for this age group.

For the 15-19 age group the increase in enrolment in relation to that in population is general, with Italy, Portugal, Turkey, France, Norway, the United Kingdom, Yugoslavia and Denmark showing particularly large increases.

For higher education (age 20-24), France has the largest expected relative increase, although those for Switzerland, Turkey, the United Kingdom, the Netherlands, the United States, Canada, Denmark and Spain are also outstanding. Almost all the countries anticipated large increases, Greece, Ireland and Iceland being the exceptions[2].

g) *Trends in Population, Students, Teachers and Expenditures*

It is possible to project the movement of population, students, teachers and expenditures by age groups. Messrs. Svennilson, Edding, and Elvin at the Washington Conference of 1961 presented a survey covering these variables for the OECD countries and the USSR from 1958 (or nearest year) to 1970 (high alternative). Obviously, the

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[1] Calculated from *Ibid.*, p. 75, table 5.

[2] Based on *Ibid.*, p. 88/89, Diagram 7.

TABLE 13. POPULATION, STUDENTS, TEACHERS, CURREN
BY AGE GROUPS OF STUDENTS, AND GROS
PROJECTED INCREASE BY 1970 (HIG

COUNTRY	AGE							
	5 - 14				15 - 19			
	POPULATION	STUDENTS	TEACHERS	EXPENDITURE	POPULATION	STUDENTS	TEACHERS	EXPENDITURE
Sweden	— 7	— 7	2	30	— 10	34	67	99
Switzerland	— 1	5	23	64	17	68	106	173
Luxembourg	5	17	41	87	25	76	127	200
Belgium	5	6	18	45	32	88	115	179
United Kingdom	3	3	11	32	23	118	125	171
France	4	6	19	65	49	127	127	202
Denmark	— 9	— 2	17	60	12	112	113	190
Norway	3	9	19	55	35	127	128	195
Germany	19	26	53	118	— 12	50	72	148
Netherlands	— 5	— 2	15	62	23	68	87	163
Iceland	18	32	68	106	19	34	50	100
Austria	4	6	22	69	— 23	48	50	114
Ireland	— 5	— 4	10	38	— 6	21	18	53
Italy	15	23	29	106	— 5	141	150	298
Yugoslavia	17	50	60	235	20	113	113	350
Spain	8	22	44	117	8	79	78	170
Greece	6	10	28	96	— 9	29	33	164
Portugal	— 2	22	26	69	12	129	128	206
Turkey	30	60	71	126	22	122	122	197
OEEC area	10	18	28	71	11	96	110	185
Canada	34	35	57	104	58	89	84	146
United States	21	21	41	61	56	76	77	109
OECD area	15	19	34	66	26	84	88	131
Soviet Union	28	43	51	203	33	64	75	254

1. 1958 or nearest year.
2. Increase 1970 over 1957. Excluding Yugoslavia, but including the Saar.

larger the rise in students in relation to population and in teachers in relation to students, the greater will be the increase in expenditures. Assuming constant prices, expenditures will also rise in response to any improvement in productivity, in turn reflected in rising costs of services[1].

Below I compare some of the figures for 1958 (or nearest year) with the high alternative projections for 1970. Where the increase in population for any particular age group is small and the educational achievement has been high, the anticipated increase in

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[1] *Ibid.*, p. 94, table 14.

XPENDITURE ON EDUCATION FROM ALL SOURCES ATIONAL PRODUCT PER CAPITA - BY COUNTRIES. LTERNATIVE) OVER BASE YEAR[1]

Percentages.

ROUP								CURRENT EXPENDITURE AS SHARE OF GROSS NATIONAL PRODUCT			GROSS NATIONAL PRODUCT PER CAPITA INCREASE 1970 OVER BASE YEAR
20 - 24				5 - 24							
POPULATION	STUDENTS	TEACHERS	EXPENDITURE	POPULATION	STUDENTS	TEACHERS	EXPENDITURE	BASE YEAR	1970	INCREASE 1970 OVER BASE YEAR	
34	45	117	157	1	1	19	60	3.35	3.91	16.7	27
19	142	100	167	8	14	36	102	2.46	3.44	39.8	33
14	42	80	100	13	26	59	114	1.32	2.08	57.6	33
20	75	115	157	16	17	35	90	2.63	3.67	39.5	28
34	128	117	164	14	13	30	73	3.02	3.95	30.2	25
41	161	162	244	22	22	35	110	2.72	3.68	35.3	40
38	88	88	158	6	10	40	96	2.46	3.22	30.9	37
57	116	79	131	20	29	43	94	2.79	3.70	32.6	30
- 21	29	30	87	— 1	29	55	121	2.11	2.68	27.0	54
48	122	84	158	12	9	32	92	3.48	4.07	17.0	41
11	25	25	67	16	33	60	100	1.97	2.71	37.6	27
16	50	57	86	— 1	10	28	80	2.74	3.32	21.2	43
9	33	29	60	— 2	— 2	12	43	2.46	2.97	20.7	28
6	66	65	166	7	36	50	150	3.21	4.45	38.6	60
— 2	67	67	262	13	57	69	262	2.00	2.59	29.5	141
8	82	106	212	8	29	52	142	1.40	2.08	48.6	51
5	12	40	117	2	12	29	100	1.27	1.41	11.0	62
3	35	41	86	3	29	40	99	1.62	2.22	37.0	35
30	130	126	211	28	63	76	154	1.73	2.38	37.6	42
14	81	88	169	11	26	42	104	2.63	3.37	28.1	40[2]
52	96	97	155	42	45	66	122	3.39	4.06	19.8	30
63	118	118	159	36	36	56	92	2.61	4.38	21.3	29
29	102	105	161	21	31	50	97	3.25	4.00	23.1	36[2]
— 3	43	66	235	21	48	59	221	3.17	4.98	57.1	102

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expenditures will probably be small. Conversely, when a large increase in population is expected and the educational achievement has been low, or if the number of teachers tends to rise greatly in relation to the number of students, or if real income per capita increases greatly, then the expected increase in expenditure will be large.

Comparison between 1958 and 1970 (High Alternative)

Age group 5-14

Increase in expenditure for the OEEC area = 71 per cent.

Countries far below the average are Sweden (30), United Kingdom (32), Ireland (38), Belgium (45).

These are countries with a high rate of enrolment (except Ireland) and which are expecting their population to increase only slightly or even to decline. The increase in expenditure is explained by improvements in the teacher/student (T/S) ratio, and by anticipated increases in productivity.

Countries whose anticipated increase in expenditures is much above the average show a large rise in the student/population ratio (S/P).

Yugoslavia, 235 per cent increase in expenditures — especially important are the increases in the T/S ratio and productivity.

Soviet Union, 203 per cent — large rise in population, moderate rise in S/P and T/S ratios, and very large increase in productivity.

Turkey, 126 per cent — large increase in population, S/P ratio and productivity.

Germany, 118 per cent — substantial rise in population, large increase in T/S ratio, and productivity.

Spain, 117 per cent — large increase in S/P and T/S ratios and in productivity.

Iceland, 106 per cent — increase in population, S/P and T/S ratios.

Italy, 106 per cent — moderate rise in population, S/P and T/S ratios, but *very large* increase in productivity.

In general, these are countries with considerable scope for raising educational standards for the 5-14 age group. They anticipate a substantial rise in population (except for Spain), improvements in the S/P and T/S ratios, and especially large increases in productivity.

Age group 15-19

Increase expenditure for the OEEC area = 185 per cent.

Countries far below the average are Ireland (53), Sweden (99), Iceland (100), United States (109), Austria (114), Germany (148).

With the exception of Iceland and the United States, these are countries which expect a decline in the population aged 15-19. The fact that expenditures still increase substantially is explained by a large rise in the S/P and T/S (24) ratios, and some increase in productivity. These countries include some with a relatively small enrolment for the 15-19 age group, e.g. Ireland and Austria.

Countries whose anticipated rise in expenditures is much above the average :

Yugoslavia, 350 per cent — an especially large rise in the S/P ratio and in productivity.

Italy, 298 per cent — ditto.

Soviet Union, 254 per cent — substantial increase in population, S/P ratio, and a very large increase in productivity.

Portugal, 206 per cent — ditto.

France, 202 per cent — large increase in population and S/P ratio.

Age group 20-24

Increase in expenditure for OEEC area = 169 per cent.

Countries far below the average are :

Ireland, 60 per cent — a decline in the T/S ratio ;
Iceland, 67 per cent — unchanged T/S ratio ;
Portugal, 86 per cent — in spite of a large rise in S/P and productivity ;
Austria, 86 per cent — in spite of a large increase in the S/P ratio ;
Germany, 87 per cent — in spite of a very large increase in the S/P ratio ;
Luxembourg, 100 per cent — in spite of a large increase in the S/P and T/S ratios.

Apart from Austria and Luxembourg, these countries expect either a decline or a small increase in their population aged 20-24.

Countries whose anticipated rise in expenditure is above the average :

Yugoslavia, 262 per cent — very large increase in the S/P ratio and in productivity ;
France, 244 per cent — very large increase in the S/P ratio ;
Soviet Union, 235 per cent — very large increase in the S/P ratio and productivity ;
Spain, 212 per cent — very large increase in the S/P ratio and productivity ;
Turkey, 211 per cent — very large increase in the S/P ratio and productivity.

In general, the countries anticipating the largest increases in expenditure for the 20-24 age group are those which expect greatly to increase the S/P ratio and to increase productivity considerably.

Since it is of some interest to compare for the OECD countries the ratios of S/P and T/S and the ratio of the rise in expenditure to the increase in the number of teachers which give an index of the rise in productivity, the figures given in the introduction are repeated for further analysis. (See p. 105 for explanation of ratios.)

TABLE 14. COMPARISON OF INCREASES FOR STUDENTS, POPULATION, TEACHERS AND EXPENDITURE BETWEEN 1958 AND 1970 FOR OECD COUNTRIES, BY AGE-GROUP

	AGE			
	5-14	15-19	20-24	5-24
Students/Population	19/15	84/26	102/29	31/21
Teachers/Students	34/19	88/84	105/102	50/31
Expenditure/Teachers	66/34	131/88	161/105	97/50

The largest rise in the S/P ratio occurs in the 20-24 age group, as might be expected, and the smallest in the 5-14 age group, where in many countries more than 90 per cent of the relevant population is already enrolled.

Interest in raising the number of teachers in relation to the number of students is mainly centered in the 5-14 age group, where the increase in the number of teachers is estimated to be two-thirds higher than that in the number of students — as compared to 5 per cent for the 15-19 age group and 3 per cent for the 20-24 age group.

The comparison between the percentage increase in educational expenditures and the percentage increase in the number of teachers gives puzzling results. For the 5-14, 15-19 and 20-24 age groups the percentages increases are 94, 48 and 53 respectively. It is not clear why the increase should be so much greater for the 5-14 age group. This surely could not mean that the salaries of teachers in elementary schools would rise so much more than those at other levels. If we assume, as we do, that the general rise in productivity is reflected equally for all age groups in the E/T ratio, then the ratios should be roughly equal. If we assume, as we do, that prices remain stable, then the higher E/T ratio for the 5-14 age group cannot be explained by a rise in prices other than for teachers' salaries.

If E/T measures the increase in productivity, the assumed rises from 1958 to 1970 vary greatly from country to country, e.g. cf. 262/69 for Yugoslavia, 110/35 for France, and 100/29 for Greece, with 92/56 for the United States and 73/30 for the United Kingdom.

h) *Explanations of Increases in Expenditures*

For the 5-24 age group the anticipated increases for OECD countries (high alternatives) for 1958 to 1970 were :

OECD AREA	% INCREASE
Population	21
Students	31
Teachers	50
Expenditures	97

Approximately one-third of the rise in expenditures corresponds to the increase in the number of students — increase which exceeds that of the population by 55 per cent.

On the assumption that the 50 per cent increase in the number of teachers reflects that for all education services and supplies, then a rise in services accounts for about one-half the increase in expenditures ; the supply of teachers, however, is to increase 61 per cent more than that of students. Of the 97 per cent anticipated increase in expenditures, 50 per cent corresponds to the rise in the number of pupils and the corresponding increase in services (e.g. teachers). But why should the increase in expenditures be almost 100 per cent more than that in the number of teachers ? Since the anticipated increase in productivity is only 3.2 per cent per year for five major countries in OECD the expenditures are inflated more than is justified by the increase in productivity. Hence (assuming stable prices) all we can suggest is that excessive improvements in productivity are assumed here.

i) *Trends in Expenditures at Different Levels*

In general, as standards of living rise, the relative percentage of public expenditures on education tends to fall for ages 5-14, and to rise for ages 15-19 and 20-24. This conclusion is supported by a comparison of expenditures in 1958 (or nearest year), and the high alternative projections for 1970.

TABLE 15. CURRENT EXPENDITURE ON EDUCATION FROM ALL SOURCES, PERCENTAGES BY AGE GROUPS, OEEC AREA, 1958 (OR NEAREST YEAR), HIGH ALTERNATIVE PROJECTIONS FOR 1970 AND PERCENTAGE CHANGE

	1958 OR NEAREST YEAR (%)	1970 (HIGH ALTERNATIVE PROJECTION) (%)	% OF CHANGE
Age 5 - 14	69.1	57.8	— 16
15 - 19	20.8	28.9	+ 39
20 - 24	10.1	13.3	+ 32

Source : *Policy Conference on Economic Growth and Investment in Education*, II, p. 92; cf. pp. 102-3 for limitations of data.

Where comparison is possible — crude comparisons, indeed — it seems that for the more affluent countries expenditures tend to rise more consistently for secondary than for primary, and for higher than for secondary education. In Table 16 see Germany, Italy, the Netherlands, and Norway on the one hand and Austria, Portugal, and Spain on the other.

TABLE 16. POST-WAR RISE, NUMBER OF TIMES AMOUNT OF PUBLIC EXPENDITURES ON EDUCATION (IN DOMESTIC CURRENCIES)

COUNTRY	YEARS COVERED	NUMBER OF TIMES EARLIER PERIOD TO 1960		
		PRIMARY	SECOND-ARY	HIGHER
Germany	1953 to 1960	1⅚	2	2⅔
Italy	1953 to 1960	2	3—	5
Netherlands	1945-49 to 1960	3⅔	5	10
Norway	1953 to 1960	2+	3	5⅔
Austria	1945-49 to 1960	6	28	12
Portugal	1953 to 1960	2—	2—	1½
Spain	1953 to 1960	2⅔	5⅔	1⅔

Source : UNESCO, *Public Expenditures on Education*, Paris 1955-56, Tables 8, 9, 10 and *Replies to Questionnaire* ST/Q/58/64 (My calculations).

In general, as expenditures rise for the 15-19 and 20-24 age groups, the costs per student tend to increase disproportionately, as suggested by the following figures :

Table 17. RELATIVE PERCENTAGE OF EXPENDITURES TO THAT OF ENROLMENT, 1958 OR NEAREST YEAR, BY AGE GROUPS, OEEC, US AND CANADA, AND USSR*

	OEEC	US AND CANADA	USSR*
Age 5-14	78	74	82
Age 15-19	219	119	111
Age 20-24	505	594	333

Source : My calculations based on materials in OECD *Policy Conference on Economic Growth and Investment in Education*, II, pp. 71, 92.

* For the Soviet Union, evening classes and correspondence courses have been included as, more than in other countries, they form an essential part of the educational system ; their content is the same and they lead to the same examinations as full-time courses.

The figures are obtained as follows. For the 5-14 age group, for example, for the OEEC area, the percentage of expenditures is 69 and of total enrolment 88½. Hence 78 : the ratio of percentage of expenditures over that of enrolment ($\frac{69}{88\frac{1}{2}} = 78$). In other words, primary education accounts for a larger percentage of enrolment than of expenditures. In higher education in the OEEC area, 2 per cent of the enrolment absorbs 10.1 per cent of the expenditures, hence the cost per unit — of 505 — is 6-7 times as great as for primary schools, and 2½ times as great as for secondary schools. It is of interest to note that the rise in unit costs, as we move from primary to secondary and to higher education, is much greater for the OECD countries (OEEC plus United States and Canada) than for the USSR. Unit costs for secondary in relation to primary education increase more in the OEEC area than in the United States, and more in the USA than in the USSR.

j) *Educational Expenditures and GNP*

Table 18 shows per capita GNP ; public expenditure on education as a percentage of GNP ; and enrolment as a percentage of the corresponding age group. Educational expenditure as a percentage of GNP in 1958 or nearest year was :

OEEC area	3.21 %
Canada-US	4.47 %
OECD (1 + 2) . . .	4.01 %
Soviet Union	3.74 %

In general, when GNP per capita is high, the tendency is to spend a large proportion on education, but there are some exceptions. Expenditure is lower for Belgium, Denmark and Germany than might be expected from their per capita GNP, and that for Italy and the Netherlands rather larger than might be expected.

For the 5-14 age group the percentage enrolment in schools tends to vary with per capita income. Austria and the Netherlands are rather higher and Denmark, Germany and Norway lower than might be expected however.

Yugoslavia and Norway have relatively high expenditures for the 5-14 age group, although their enrolments are below average. In view of the heavy enrolment in relation to population age 5-14, the percentage of the total expenditure for this age group is surprisingly low for Great Britain and Austria.

For the 15-19 age group, the highest enrolments in relation to population of corresponding age are for the United States, Canada, Norway, Holland, Belgium, and Sweden. This corresponds to the size of their educational expenditure as a percentage of GNP, except for Belgium. Of the countries with a low percentage enrolment — Portugal, Spain, England and Wales, Yugoslavia, Italy, Germany and Denmark — expenditure as a percentage of GNP was below average for all but England and Wales and Italy.

For the 15-19 age group, the ratio of the percentage of (total) educational expenditures in relation to percentage of enrolment varies greatly, a high ratio suggesting relatively costly secondary education. This may be explained to some extent by differences in the

TABLE 18. BREAKDOWN OF ENROLMENT AND EDUCATIONAL EXPENDITURE BY AGE GROUPS (1960) AND ALSO % GNP SPENT ON EDUCATION (1958 OR NEAREST YEAR) AND GNP PER CAPITA (1960)

COUNTRY	GNP PER CAPITA $	PUBLIC EXPENDITURE ON EDUCATION AS % OF GNP, 1958 OR NEAREST YEAR	PRE-SCHOOL PRIMARY		SECONDARY		HIGHER EDUCATION	
			ENROLMENT AS % OF POPULATION 5-14	% OF ALL EXPENDITURE ON EDUCATION[4]	ENROLMENT AS % OF POPULATION 20-24	% OF ALL EXPENDITURE ON EDUCATION[4]	ENROLMENT AS % OF POPULATION 15-19	% OF ALL EXPENDITURE ON EDUCATION[4]
	1	2	3	4	5	6	7	8
Austria	802	2.85	85	26	13	43	4	11
Belgium	1,331	2.79	95	37	32	49	5 ½	6
Denmark	1,300	3.01	76	86[3]	19	—[3]	5 ½	9 ½
Germany	1,263	2.79	80	48	18	36	4 ½	13
Italy	629	3.42	79	37	16	32	4	11 ½
Netherlands	978	4.23	86	36	33	41	5	15
Norway	1,236	3.67	77	54	36	29	9 ½	8
Portugal	253	2.07	56	45	9	29	3	9 ½
Spain	—	1.57	75	47	13	16	3	9
Sweden	1,631	4.14	83	52	32	30	11	8
United Kingdom	1,493	3.67	99	27[5]	18	34[5]	4	14[5]
Yugoslavia	—	2.60	66	58	17	19	4	16
United States	2,787	4.53	90	73[1]	66	73[2]	12	27

1. Including Secondary.
2. Including Primary.
3. 86 = General School Education.
4. Do not add up to 100 because of some exclusions, e.g. Administration.
5. England and Wales.

Source : Col. 1, U.S. *Statistical Abstract,* 1963, Table 1242 ; Col. 2, OECD, Washington *Policy Conference...*, II, p. 93 : Cols. 3, 5, 7 from OECD, *Ibid.*, p. 108 ; Cols. 4, 6, 8 calculated from UNESCO, *Replies to Questionnaire ST/Q/58/64.* For various reservations see original.

definition of secondary education and in the proportion of vocational (i.e. expensive) secondary education. Ratios of expenditure to enrolment vary from 3 1/2, 2, and 2 for Portugal, Germany and Italy, respectively, to 1 1/7 and 4/5 for Yugoslavia and Norway.

The following ratios of expenditure on general, as compared to vocational, secondary education do not offer much explanation of the high costs of secondary education however : England and Wales = 4 to 1 ; Germany, Sweden = 2 to 1 ; Spain, Holland = 1.2 to 1 ; Portugal = 4 to 5.

For the 20-24 age group the countries with high educational expenditure (with the exception of Switzerland) are also those where it is high in relation to GNP and who have a high per capita income. The exceptions are Yugoslavia and the Netherlands (where GNP per capita is low). For all these countries the ratio of expenditure to enrolment is roughly 2 to 1.

Expenditures were relatively low for Belgium, Norway, Portugal and Spain.

k) *Research Expenditure*

The output of scientists and the ratio of expenditure on research and development to GNP are important factors for growth, as are also improvements in health, education and housing. In general there is a high degree of correlation between the amount spent on R and D and GNP. The highest percentages occur in the United States and the United Kingdom. Japan's percentage is surprisingly high in relation to her GNP. How much is spent on R and D depends on several factors (e.g.) :

The contribution of government — France, the United States and the United Kingdom in 1961 contributed 78, 66 and 61 per cent of R and D expenditures out of public funds and Japan (in 1959) only 36 per cent.

When aircraft, electronics, chemicals, machinery (Group A), etc., are important, R and D expenditures tend to be high. In these and similar industries research expenditures were 13, 8.3 and 6.3 per cent of net output in the United States, Sweden and the United Kingdom in 1958. In another group of industries, e.g. food, textiles, lumber (Group C), the R and D outlays were only 0.5 per cent in the United States and 0.3 per cent in the United Kingdom.

The first group of industries (Group A) in the United States, Sweden, and the United Kingdom accounted in 1959 for 92, 84 and 91 per cent of R and D, respectively, whereas Group C accounted for only 2.5, 2.9 and 5 per cent. Group A industries tend to be the fastest growing ones, partly because of the large outlays for R and D.

As might be expected, the number of scientists and engineers varies greatly per 1,000 employees according to the industry concerned :

United States — Number of Scientists and Engineers engaged on R and D per 1,000 employed in companies carrying out R and D, 1959

Aircraft	84
Electronics	60
Instruments	48
Chemicals	38
All Industry	24

The size of the firm is also important :

Size (Employees) 1958, USA :	5,000 or more	1,000-4,999	Fewer than 1,000
Percentage of total of R & D Expenditure	85	8	7

The 20 largest American companies are responsible for the following percentage of R and D expenditures in their industry.

	% in 1959
Chemicals and Allied	73
Petroleum Refining and Extraction	95
Machinery	69
Aircraft and Parts	95
Professional and Scientific Instruments	85

EDUCATION AND THE ECONOMY

One of the arguments most frequently used for raising the level of education is the needs of the economy, which is said to require more educated men and women. This is evident, for example, in the fact that in the United States unemployment is much higher for those with fewer than 8 years' education than for those with some college education, i.e. 1-2 per cent for those in the professions, and as high as 12 per cent for unskilled workers.

It is estimated that in the United States from 1960 to 1975 an additional 5 million professional workers and 2 ½ million managerial and executive category personnel will be needed, all of whom, it is assumed, will require higher education. Recently, the number of scientists has been doubling every 10 years ; the number of workers in manufacturing is levelling off : from 1947 to 1962 the rise was only 8 per cent, whereas in other non-agricultural employments it was 35 per cent. In the service or tertiary industries the need for college-trained men and women is much greater than in manufacturing.

All this suggests that the number of drop-outs must be reduced and more college-trained men and women be produced. But the United States Government stops short of planning its economy and of training manpower to meet future needs. It will go only as far as to point out likely needs by estimating future incomes, spending patterns, and the related needs for manpower with adjustment for changes in productivity. The estimates will not be merely projections on the basis of past trends but will take into consideration the rising amounts required for travel, education, health and housing, and the relative decline in amounts for food and clothing.

The government will try to influence educational patterns, to some extent, by providing loans and scholarships, by subsidising capital expenditure to raise the output of scarce manpower, by estimating the number of physicians needed, for example, and helping to finance additional medical schools, and even by giving preference to the sciences in the allocation of aid. But that is as far as the government dares to go, and there is much opposition to the substantial financing of these needs.[1]

In France, serious attempts are being made to study manpower needs, and to plan for them as far ahead as 1975. Thus, according to one method (Jean Fourastie) the population is divided into 20 categories, each of which is broken down into 6 groups according to worker qualifications. In the tertiary sector, by 1975, 10 per cent of the working population ought to qualifiy with 11 years of study beyond the « cycle of observation » (after 7 years of study) and 40 per cent with 7 years beyond the « cycle of observation ». In the secondary sector, the respective figures would be 5 and 24 per cent.

This type of analysis brings to mind the United States Department of Labor study of 4,000 occupations. The required numbers at different educational attainment levels are related to the needs of these occupations.

The French deem it important that the student should be trained to meet the needs of the economy as it is expected to develop. Colleges and universities will remain largely responsible for widening knowledge and passing it on, as well as for improving and extending the cultural aspects of education.[2]

British experts are less optimistic than the French about estimating manpower needs. The British Committee on Higher Education (1963) estimated that by 1980 enrolment in IHL would rise by 150 per cent. This estimate is based not on manpower needs but rather on demands for education by potential students, in turn depending on the numbers in the relevant age groups, the output of qualified secondary school leavers, the applications for admission to IHL, and the length of study.

The Committee acknowledges that it may be possible to estimate the number of teachers or physicians that may be required, although even here much will depend on the salaries offered to the members of the profession, trends in productivity, etc. The Committee finds it very difficult, if not impossible, however, to estimate the needs of educated manpower in general. There are such considerations as productivity changes and the number of scientists trained and of those actually working as scientists ; there is the question of rewards to the educated which may change greatly over a period of 20 years, and the structure of production, international competition, and the like is unknown.

> « ... we have not found it practicable to make trustworthy estimates of the aggregate demand for the products of higher education twenty years hence, and our recommendations for the

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1. See especially *Manpower Report of the President*, 1963 and 1964, and *Physicians for a Growing America*, 1959.

2. See L'Institut d'Etude du Développement Economique et Social : International Study of University Admissions, *Les Problèmes de l'Accès à l'Enseignement Supérieur*, 1961, Part 2, Ch. 2 ; and *Policy Conference on Economic Growth and Investment in Education*, Washington, 1961, II, pp. 48-50, 53-56 ; S.E. Harris, ed., (OECD) *Economic Aspects of Higher Education*, Essays by G. Bombach and C. Vimont ; and U.S. Dept. of Labor, *4,000 Occupations*, 1963.

provision of places are based essentially on the estimates of potential supply. »

Despite these difficulties the Report does not show any concern that there may be an excess of highly educated manpower. From 1962-63 to 1980-81, the number of full-time students at IHL should increase from 216,000 to 558,000. For all students (including part-time and private study) the increase would be from 356,000 to 788,000. But although some particular profession or employment may be oversupplied, it is most unlikely that any serious general oversupply will develop. Since education would be general in character, university graduates would be able to adapt their training as necessary. In these 20 years or so the proportion of the working population with a college education should rise from 3.4 per cent in 1960-61 to 6.2 per cent by 1980-81[1] (9 per cent currently in the United States) ; and with no further increase in the proportion of the age group attending IHL, this figure should rise to 15 per cent by the end of the first quarter of the 21st Century.[2]

Since it may be argued that supply creates its own demand, within broad limits there need be no concern over the possibilities of an excess supply. If there is a large output of scientists, for example, they will find outlets in additional research activities, as engineers or in teaching.

In Sweden great interest is shown in forecasting the needs for educated manpower. The government has provided for this kind of forecasting. There are indeed difficulties. The supply of « educated » manpower of different categories is not well known. The tendency is to project for the future from the past. The final estimates of the number of engineers and scientists required have been subject to much criticism. One critic writes :

> ... British experience suggests that the criticism made... of the calculation of the need for engineers as a linear function of productivity is well based. A somewhat similar assumption was made in the United Kingdom some years ago in the forecasting of scientific manpower and was later found to be unreliable...

The Swedish approach is to estimate the needs of educated manpower at the university, gymnasium, and below the gymnasium level. But at times the estimate is made only on the basis of a programme rather than a projection. (« Programmes, that is, what the experts of the conditions on the labour market concerned consider to be a desirable development... »)

At the higher educational level, the actual numbers and the estimated need for manpower with a university degree is as follows :[3]

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[1] The proportion of the working population with higher education (either full-time or part-time or by private study) will rise from 5 per cent in 1960-61 to 9.7 per cent in 1980-81.

[2] *Committe on Higher Education*, 1963, Ch. 6, especially pp. 70-74, and *Ibid., The Demand for Places in Higher Education*, p. 166.

[3] See especially *Swedish Contribution to EIP, Educational Policy and Planning in Sweden*, 1964 (Provisional), App. XI table 21 and *Comments* on same by J. F. Embling of Dept. of Education in United Kingdom, and OECD, *Scientific Policy in Sweden*, 1964, p. 63.

Table 19. SWEDEN. UNIVERSITY GRADUATES : PRESENT NUMBERS AND ESTIMATED NEEDS

	NOS. (000)	INDEX	% OF POPULATION 25-64 WITH DEGREE
1940	36	100	1.06
1960	64.5	178	1.66
1975 (Estimate)	139-145	382-399	3.34-3.49

At the gymnasium level, needs for gymnasium students are as follows. (It is assumed that 50 per cent of the gymnasium students complete the course, and that half of these continue to study in universities or colleges.)[1]

1960 (actual)	12,330
1970	26,710
1980	38,300
1990	50,000

SCIENTISTS

In recent years much emphasis has been put on the need for more scientists. The rising demand for scientists by government, the relation of achievements in science and the level of production and GNP, and the shortage of science teachers, have all been vital factors in the search for scientists.

Almost everywhere a shortage of scientists exists. According to an OECD study, 12 out of 14 countries had insufficient scientists in 1959, three having partial shortages, and one a shortage of high-level scientists. The same general assessment was true for engineers and technicians. Where estimates were available for later years, i.e. 1963 and 1970, some improvements were expected.[2]

It is not always clear what is meant by shortages. One definition is simply the difference between estimated future need and availability. It is not easy to estimate need, however, for estimates have to be made concerning the expected rise in GNP, the structure of output, changes in productivity, the numbers who will be available in relation to the numbers trained, and the ratio of engineers and scientists needed to the total numbers on the labour market. Moreover, there may be an overall shortage, and at the same time a surplus of specific types of engineers and concomitant shortages of scientists. What may appear to be an impending shortage may be met, as in the second world war, by upgrading. Perhaps as many as one quarter of the new engineers in the United States in recent years are not college graduates. In Sweden a distinction is made between university-trained engineers and scientists, those trained at the gymnasium and others.

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[1] At present about 20 per cent of the relevant age-group go to the gymnasia. Of these about 80 per cent pass the « student-examen » and of these a rising proportion (now 90 per cent) actually enter the institutions of higher education... See : *Scientific Policy in Sweden*, OECD, January 1964, p. 14.

[2] OECD, *Resources of Scientific and Technical Personnel in the OECD Area*, 1963, p. 179.

Another approach to defining shortages has been termed the « economists' approach ». Here it is assumed that if there is a shortage of scientific personnel, it will be expressed in the form of the high salaries offered for work of this type, e.g. the high earnings of physicians. The high salaries will attract more people to become scientists, so that supplies will increase ; consumers will also economise and substitute other services where possible. The result will be a correction of the disequilibrium through an upward adjustment of supply and a downward adjustment of demand. A number of years ago, George Stigler tried to show that engineers were not scarce in the United States, for had there been a genuine scarcity the incomes of engineers and scientists would have been much higher, particularly for new entrants. It is possible, however, that in the 1950's the income of scientists and engineers with similar training increased, that is, that the proportion of college-trained scientists and engineers declined : the average engineer or scientist was less well-trained in 1960 than in 1950, and the average age of the engineer was much lower.[1]

Shortages are related to prevailing conditions of full employment and the increasing number of scientists and engineers required to stimulate growth. In the 1930's there was a threat of an over supply of educated personnel, but since then an unexpected rise in demand has created at least a temporary shortage, a condition that may easily be corrected once the output of college graduates doubles or trebles over a number of years.[2]

One way of treating the problem of an inadequate supply of scientists is to improve their utilisation. Perhaps the greatest shortages are in teaching, and especially secondary school teaching. Government, industry and research tend to be the most effective bidders for scarce manpower. In IHL the neglect of teaching and the rising interest in research raise serious problems. Diverting manpower from government and industry to teaching, careful allocation of resources devoted to research and, as in Sweden, increased teaching responsibilities of those who are primarily teachers would all help to provide the necessary supply of teachers.[3]

In many countries, special measures have been taken to encourage the output of engineers and scientists. For example, in the United States, the sciences have been favoured in the allocation of student aid. In Great Britain, the government has provided additional capital facilities for science training, the Barlow Committee having recommended in 1946 that the output of graduates in science and technology should be doubled. This increase was achieved in 5 years instead of the expected 10. In the early 1950's it was decided roughly to double the size of the Imperial College of Science and Technology in 10 years, i.e. from 1,650 to 3,000 students, and by 1962-63 the country had achieved this objective. The estimated increase in enrolment for scientists in the universities from 1955-56 to 1966-67 was from 29,512 to 66,692, or a rise of 127 per cent. It was hoped that supply and demand would be in balance by 1963 or a few years later. The Grants Committee assumed that about two-thirds of the additional students would take pure or applied science.[1]

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[1] OECD, *Resources of Scientific and Technical Personnel in the OECD Area*, 1963, p. 177-179 ; OECD, *Scientific Policy in Sweden*, 1964, Part II, and *Higher Education and the Demand for Scientific Manpower in the United States*, 1963, pp. 79-87.

[2] See S.E. Harris, *The Market for College Graduates*, 1948.

[3] See especially H. Orlans, *The Effects of Federal Programs in Higher Education*, Brookings, 1962, for an excellent discussion on the allocation of resources to research and teaching and the growing neglect of the latter in major universities.

In Sweden the government took measures to increase by more than 100 per cent the number of graduates from institutes of technology between 1959 and 1970 and by 4-5 times the number from the science faculties. Total enrolment in the universities was planned to rise from 35,000 to 82,000 during the same period[2].

The governments of the United Kingdom and Sweden assume leadership in planning for the sciences, and provide the resources. The universities are not controlled by the government in the United Kingdom as they are in Sweden. In Britain the universities determine enrolments, curriculum, etc., but are not likely to be inattentive to national needs.

The pressure to increase the number of scientists and engineers raises serious problems. Large increases may be at the expense of the humanities or social sciences. There are many who contend that the gains in the sciences should not be at the expense of other curricula.

The output of scientists and their rate of increase vary greatly from country to country. The results are somewhat surprising also. For example, the number of scientists in relation to total enrolment in the United States is surprisingly small for the most economically avanced country. The proportion of technicians to engineers is also much smaller than in the major European countries, thus emphasising even more the tendency to neglect the sciences in the United States. It is indeed not easy to explain this relatively small output of scientists. One reason may be the fact that a much larger proportion of the college-age population is enrolled in IHL in the United States than elsewhere. As enrolment rises the average aptitude of the student declines, and this may be felt especially in the sciences and technology. (Many claim, however, that despite rising enrolment, average aptitude is also rising.) This does not mean there are not large numbers of scientists and engineers in the United States. In fact, the number greatly exceeds that of equal populations in Western Europe, the explanation being the larger enrolment in IHL in the United States. In 1960, there were 335,000 scientists, 850,000 engineers, and 675,000 technicians in the United States. In fact, if the proportion of scientists to working population were to continue as in the past, in less than 100 years scientific personnel would represent 100 per cent of the working population.

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[1] University Grants Committee, ***University Development, 1957-62,*** pp. 154-56 and the ***Committee on Scientific Manpower,*** 1946.

[2] ***Scientific Policy in Sweden,*** OECD, 1964, pp. 16-17.

Despite the strong measures taken, the proportion of bachelor and professional degrees in the sciences rose only from the low level of 19.4 per cent in 1957-58 to 20.6 per cent in 1959-60. The proportion of Masters' and Ph. D. degrees rose from 17.9 to 19.4, and from 41.1 to 42.1 per cent respectively, although the increase in absolute numbers enrolled was more spectacular[1].

In contrast to the American experience, Britain has a very marked increase in the percentage of full-time students in pure and applied science : 1938-39 = 25.9 ; 1953-54 = 33.5 ; 1961-62 = 40.6 ; 1966-67 = 46.6 (estimate).

Table 20 shows the trend of science education in the 1950's and the projection into the 1960's. France is particularly well situated, whether we consider the actual or relative numbers of new entrants, of total enrolment, or of first degrees in the sciences. The record of Sweden is also very good, and the Netherlands and Italy have made considerable progress. There are gaps in the British figures, but the record is good on the proportion of enrolment, the relative number of first degrees and the number of graduates in relation to entrants in the sciences. The German record is disappointing throughout.

OUTPUT OF TEACHERS

Almost everywhere there are complaints of a shortage of teachers, making it increasingly difficult to train a sufficient number of secondary and third-level students. The present generation of teachers was born in a period when the birth rates were low, and now has to provide for the education of those born in periods when it was high. In the United States there is a 1 to 2 ratio of births in the generations of teachers and pupils. Schools and colleges face the competition of government and industry for research and other staff. The additional revenues required to meet the increased needs for teachers are obtained only with difficulty.

It is not easy to estimate the number of teachers needed. All kinds of factors are relevant : how many students will there be, for example, by 1970 or 1980 ? This depends partly on the numbers in the age group, on the proportion of each age group at school or college, and on the number of years of education ; (which in turn influence the enrolment of different age groups) ; on the wastage of teachers (i.e. the numbers leaving, retiring, or dying) ; on the student/teacher ratio and on the proportion of the teachers' time to be spent on research rather than on teaching.

Under the pressure of the intense need for teachers, authorities tend to take corrective measures, for example, by increasing the student/teacher ratio. Thus, in higher education in the United Kingdom, the S/T ratio was as follows[2] :

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[1] See *Higher Education and Demand for Scientific Manpower in the United States*, pp. 34, 39, 69.

[2] University Grants Committee, *Returns from Universities and University Colleges, 1960-61*, 1962, pp. XVIII-XIX.

TABLE 20. NUMBERS IN THE SCIENCES, 195

COUNTRY	SCIENTISTS, NEW ENTRANTS IN RELATION TO POPULATION OF CORRESPONDING AGE GROUPS PERCENTAGE			IBID., % INCREASE		NEW ENTRANTS TO SCIENTIFIC STUDIES AS % OF ALL NEW ENTRANTS			% INCREASE IN ENROLMENT IN SCIENTIFIC STUDIES	
	1950	1963	1970	'50-'59	'59-'70	1950	1959	1970	'50-'59	'59-'70
France	1.1	5.4	7.3	166	206	24	40	52	154	226
United States	1.6[1]	3.1[1]	3.4[1]	97[1]	98[1]	7[1]	8[1]	9[1]	54[1]	94[1]
Sweden	1.2	3.8	5.2	117	178	29	32	44	81	224
United Kingdom[2]	1.6('55)	—	—	—	—	—	43	—	41	—
Netherlands	1.0	1.9	2.0	66	62	36	40	45	36	95
Italy	1.2	2.3	2.9	33	73	25	23	24	21	65
Germany	1.1('55)	2.0	1.9	22	25	37	29	27	51	29
Spain	0.6('55)	1.2('59)	—	62	—	25	44	—	31	—

1. Engineering only.
2. G.B. only.
3. Natural science and engineering only.

Source : Adapted from Tables, OECD, *Resources of Scientific and Technical Personnel in the OECD Area*, pp. 40-67.

	1938-39	1954-55	1961-62
Art and Social Studies	11.9	8.9	10.6
Pure Science and Applied Science	7.6	9.7	10.4
Medicine	31.3	8.2	7.4
All Faculties	11.7	9.2	10.4

But the Robbins Committee finds a 7.6 to 1 ratio for all faculties and universities for 1961-62, that is full-time students in relation to full-time teacher[1].

When economic pressure is great, a deterioration in the S/T ratio is likely to occur. Thus in primary education the ratio for 14 countries varied from 22 to 1 for Italy to 48 to 1 for Turkey (comparison for a year in the period 1956-60). The highest ratios were for relatively poor countries : Portugal, Greece, Spain and Turkey. In secondary education the figures were a minimum of 17 to 1 for the United States and a maximum of 42 to 1 for Greece. In higher education, the minimum was 8 to 1 for England and Wales and the maximum 22 to 1 for Greece[2]. In an estimate for IHL in the United States, one expert anticipated that a recent S/T ratio of 13 to 1 would rise to 16 to 1 by 1970[3]. This is the result of the pressure of rising numbers. The inference is not necessarily a deterioration in quality, as the improved use of teaching aids and the help of assistants may offset the rise in the S/T ratio.

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[1] *Higher Education Report*, p. 26.

[2] OECD *Greece : Education and Economic Development*, Working Draft, 1964, Ch. 2, pp. 62-63.

[3] NEA, *Teacher Supply and Demand in Universities, Colleges, and Junior Colleges, 1950-60 and 1960-61*, 1961, p. 52.

ND LATER YEARS AND RELATED VARIABLES

ENROLMENT IN SCIENTIFIC STUDIES IN RELATION TO TOTAL ENROLMENT PERCENTAGE			FIRST DEGREES IN SCIENCE IN RELATION TO CORRESPONDING AGE PERCENTAGE			SCIENTISTS-% RISE IN NUMBER OF FIRST DEGREES		FIRST DEGREES IN SCIENCE AS % OF TOTAL FIRST DEGREES			FIRST DEGREES IN SCIENCE IN RELATION TO NEW ENTRANTS 5 OR 8 YEARS EARLIER PERCENTAGE	
1950	1959	1970	1952	1959	1970	'50-'59	'59-'70	1952	1959	1970	'59-'55	'63-'59
22	38[3]	49[1]	0.7	1.4	4.7	114	280	29	42	57	74	72
8[1]	8[1]	9[1]	2.6	3.7	4.4	47	87	19	22	22	52[1]	65[1]
32	32	41	0.9	1.3	3.1	27	229	34	30	40	90	93
37	43[3]	48[3]	1.0	1.4	—	35	—	40	41	—	94	—
34	37	46	0.7	0.6	0.8	— 19	140	34	34	52	51	47
25	25	23	0.7	0.7	1.4	5	69	26	27	25	61	55
36	35	34	0.7	0.8	—	4	—	28	29	—	58	—
26	26	—				—	—	—	30	—	60	—

Another result of shortage is a deterioration in the quality of the teachers. In periods of rapid increase in the numbers of students, an inevitable result is a reduction in the average age of teachers, who therefore have less experience. The major source of supply of teachers in IHL is the graduate school. In 1959-61, 46 per cent of the teachers in IHL in the United States came from graduate schools, and a further 18 per cent from lower schools. When the output of graduate schools is insufficient, or a rising percentage of M.A.'s and Ph.D.'s seek occupations other than teaching, teachers are sought from schools whose students have only modest qualifications. In 1958-59, only 46 per cent of the doctorates chose teaching — 91 per cent of those reading English and 19 per cent of those reading chemistry[1].

Deterioration in quality is also suggested by the decline in the proportion of Ph.D.'s on the staff of IHL. In 1953-54, 40 per cent of the stock of college teachers had earned their doctorates, but in the next 7-8 years the proportion of new teachers with doctorates was only 25 per cent. In Great Britain, much is made of the fact that the proportion of junior faculty members is rising in relation to that of senior members. Thus whereas from 1956-57 to 1961-62 the increase in full-time academic staff was 25 per cent, that for professors was only 17 per cent. From 1934-35 to 1961-62 the ratio of professors to non-professorial staff (excluding Oxford and Cambridge) had changed from 1 : 3.94 to 1 : 7.40[2].

Similar problems of course occur in the primary and secondary schools. Even in the United States, the qualifications of a substantial proportion of the teachers are below what is considered to be a minimum. In Sweden, a substantial proportion of the teachers in the comprehensive schools do not have a college degree. In general, deficiencies in training vary by regions and subject matter, shortages being chiefly in mathematics, physics, and chemistry.

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[1] NEA, *op. cit.*, 1961, pp. 18, 45.

[2] NEA, *op. cit.*, p. 12 ; and University Grants Committee, *University Development, 1957-1962*, pp. 35, 145.

> « The future prospects for mathematics, physics, and chemistry are viewed with less optimism... the 100 per cent alternative [100 per cent with a university degree] is considered completely irrelevant. With the 60 per cent alternative we obtain a numerical surplus at the earliest in 1970-71, even if we adopt the most optimistic assumptions of the forecast[1]... »

The Robbins Committee analysed in great detail the teaching problems in higher education. Among the aspects examined were wastage, recruitment, mobility of teachers, « in-breeding », effective use of time, methods of teaching, student/teacher ratios, recourse to different techniques of teaching, etc.[2]

I shall not go into all the details, but here are a few interesting facts : 59 per cent of the teachers in universities had first-class honours degrees, 47 per cent had Ph.D.'s, and 13 per cent Masters' degrees. Thirty-seven per cent taught in the university from which they had graduated (69 per cent in Oxford-Cambridge). A matter of some relevance for the S/T ratio is the small number of lectures with audiences of more than 20 students, and the large number of tutorials and seminars. This undoubtedly partially explains the high unit cost in British universities. Half the lectures are given to audiences with fewer than 20 students, and only 6 per cent to audiences of more than 100[3].

Many teachers complain of inadequate assistance and the consequent effects on productivity. Thus, 61 per cent of those who teach subjects which require the assistance of technicians consider the help they receive insufficient, and almost one-half of the university teachers complain of inadequate secretarial assistance[4].

British higher education with 22,650 full-time teachers in 1962-63, will need 39,531 by 1973-74 and 58,858 by 1980-81. The British estimate of wastage is 4.5 per cent per year in the universities, and 6 per cent in other sections of higher education.

> « Both in universities and elsewhere the proportion of graduates needed as teachers will rise sharply up to 1965-66. From 1966-67 onwards it will fall and in the early 1970's it will be below the present proportion. The late seventies and early eighties will, owing to the recent and projected rise in the birth rate, be again a period of pressure... »[5]

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[1] *Educational Policy and Planning in Sweden, A Swedish Contribution to the OECD Programme on Educational Investment and Planning* (EIP), 1964, App. 12.

[2] *Higher Education,* Appendix, Vol. Three, 1963, *Teachers in Higher Education.* (Robbins Committee).

[3] *Ibid.*, pp. 20, 40, 73-89.

[4] *Ibid.*, pp. 86-87.

[5] *Ibid.*, pp. 139-141.

ALL RECRUITS NEEDED AS PERCENTAGE
OF HOME GRADUATES THREE YEARS EARLIER

1963-64	17.0
1965-66	20.2
1970-71	6.8
1980-81	15.2
1986-87	9.7

How then does one deal with the shortage of teachers ? First one must know how many teachers are needed. This will depend on the number of students, the S/T ratio, the number of courses, size of classes, teacher loads, the importance given to research.

One vital question is teachers' pay. The ratio of salaries for public school teachers in the United States in relation to those of other workers is the same, or above, what it was before the war. In higher education, real incomes are not much above their pre-war level, even though for the population as a whole they are about 75 per cent higher. With school, and especially higher education enrolment increasing faster than the working population, inadequate pay is a serious threat to the recruitment of teachers of quality.

In Great Britain also the question of pay is crucial ; since the government provides most of the funds for higher education, it maintains some control over pay scales. Professional salaries are carefully watched to be sure that faculty pay is not out of line with other civil service pay, and yet is adequate to ensure recruiting at the required level. A simple formula is for teachers' salaries to rise with increases in productivity. The Robbins Report, for example, finds that £ 236 million of the £ 480 million increase in higher education funds from 1962-63 to 1980-81, would represent rising productivity. Salaries would reflect these increases[1].

Another official committee reported on these problems as follows in the late 1950's[2] :

> « Any organisation faced with a claim from highly qualified personnel for improvements in salary has to ask itself what salaries the qualifications which it requires will command elsewhere, and what salaries must therefore be paid to obtain these qualifications. Universities have to ask these questions no less than other organisations... This is because the qualifications with which universities are concerned cover the entire range of knowledge, a wider range than that with which any other organisation has to deal. Moreover — and this is the heart of the difficulty — they include both qualifications of a high economic value for which there is a keen demand outside, and also qualifications of which the value is hardly economic at all, and for which the outside demand, in the economic sense, is small or even non-existent... »

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[1] *Higher Education Report*, p. 202.

[2] University Grants Committee, *University Development, 1957-62*, p. 140.

This does not mean that this salary is the academician's only consideration. He is interested in his teaching load, the kind of colleagues he will have, the atmosphere at the school or college, relief from extra-teaching duties, the attitude of the people towards his profession, his vacations and general working conditions.

It is possible to solve the problem of the shortage of teachers in higher education ; higher pay and improved working conditions would help considerably. Economies could be made by reducing the number of courses and classes, by increasing the amount of independent work done by the students, by using more teaching aids, and by making greater use of assistants for the more routine responsibilities. At present, in a period when there is a shortage of teachers, we are still maintaining retirement policies appropriate for a market where teachers are in excess supply. Apparently 60 per cent of the IHL in the United States still retire their faculty at the age of 65. The greater use of women and of part-time faculty, and the sharing of faculty with other institutions would also help[1].

THE RISING ENROLMENT IN IHL

Almost everywhere there have been large increases in enrolment in IHL. I discussed earlier the tendency for an increasing share of the total expenditure on education to go to higher education. One of the main reasons is the rise in enrolment, but, as I pointed out in my paper for OECD on Student Aid, the high unit costs of higher education, reflecting both rising prices and increasing productivity, are also relevant. In some European countries the unit costs of higher education are surprisingly high, especially if per capita incomes, which are smaller in some of these countries than in the United States, are taken into consideration.

Many factors help explain the rise in enrolment. The increase in the college age population is important, but perhaps even more so is the rise in the proportion of those of college age seeking higher education. In the United States, for example, the population of college age scarcely changed from the late 1930's to the late 1950's, yet enrolment more than doubled. In France, enrolment increased from 30,000 in 1880 to 80,000 in 1935, and to 200,000 in 1960. The experts draw particular attention to the rising percentage of the relevant age group attending IHL. The importance of this factor is also suggested by the following estimates for Great Britain[2].

In a country where the population is not rising very rapidly (e.g. Great Britain), the increase in the number of those of college age is likely to be less than in a country where the rate of increase is high (e.g. the United States). This explains the importance of the rise in the percentage of the age group interested in higher education — compare the 12,000 in the first column (increase in the size of age group) with 103,000 (the proportion of the age group

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[1] See especially C. D. Lindquist, « Recent Practices Relating to Faculty in Institutions of Higher Learning » in *Higher Education*, November, 1958, p. 44.

[2] *Higher Education*, Appendix Vol. I, *The Demand for Places in Higher Education*, 1963, p. 172.

TABLE 21. BREAKDOWN OF ADDITIONAL PLACES REQUIRED IN IHL IN GREAT BRITAIN IN 1973-74 AND 1980-81 (BASE YEAR 1962-63)

Thousands.

	1962-63	1973-74	1980-81
Total No. of places required	**216**	**392**	**558**
of which :			
Additional places required		176	342
due to :			
a) increase in size of age group		12	49
b) larger proportion of increased age-group qualifying for admission		103	193
c) larger proportion of the increased number of qualified persons who apply		31	44
d) increase in the number of overseas students		14	31
c) other reasons (longer courses, changes in sector size, etc.)		16	25

Source : Derived from Table 56, *Higher Education*, Appendix I, pp. 171-2.

qualifying) ; the 31,000 represents the tendency of a larger proportion of those who qualify to apply.

Why the large rise in the proportion of college age at college ? The explanation will vary to some extent from country to country. Undoubtedly improved economic conditions have considerable influence, not only because with rising incomes parents are more disposed to pay for higher education, but also because students are able to find jobs while studying, and public authorities are more disposed to provide facilities and to subsidise students. The importance of these considerations will vary according to the stage of economic development. Thus the very high attendance in the United States — where the entrance rate exceeds 40 per cent and enrolment is between 30-40 per cent of the corresponding age group — reflects the attainment of a level of personal income consistent with large disbursements on higher education by government and parents. No other country has yet reached this stage. But in 20 years, at current rates of growth, Western Europe should have a per capita income equal to that of the United States in 1964, so that we might then expect enrolments in Western Europe to correspond to those in the United States in 1964.

In 1962-63, there were 216,000 persons receiving higher education in Great-Britain, or roughly 4/10 of 1 per cent of the population. The corresponding figure for the United States is 4 1/2 million or 2.4 per cent. Should the United Kingdom attain the United States' proportion of 2.4 per cent, then her enrolment would be about 1.3 millions, as compared with an official British forecast of only 627,000. The British estimate on this basis seems low, even if allowance is made for a somewhat different age structure. In 1962 there were 752,000 18 year olds ; the estimate for 1982 is 944,000 or a rise of 26 per cent.

Expansion of higher education depends very largely on the amount of space available in IHL. In most countries their capacity is insufficient for all students who are able and willing to attend.

In his study for UNESCO, Frank Bowles stressed the relation of applications to inadequate space. The British have also shown that from 1955 to 1961, the percentage of university applications admitted (exclusive of Oxford and Cambridge) declined from 57 to 42 per cent. The British concluded that it therefore seems likely that the decline in entry rates is in large measure a reflection of increased competition[1].

Future enrolment in higher education depends also on access to secondary schools — particularly those preparing students for university entrance, school-leaving regulations, and the like. Obviously under the 11+ selection programme, many with the necessary ability are excluded.

There is considerable concern that the pool of ability may be insufficient to support continued large increases in enrolment. But despite the substantial increase in the proportion of those of college age attending IHL, the general view is that there is not likely to be a barrier of this kind for at least 20 years.

In short, it is certain that much untapped ability exists at present in this country.

> « ...The level of education already achieved would have surprised those alive a hundred or even fifty years ago, and it is impossible to circumscribe with a formula the potentialities of the future. »

But the Report concludes that

> « ...scarcities of inherited potential will not, as such, impose a limit on the growth in the output of qualified school leavers within the next twenty years. »[2]

We have not by any means yet exhausted the reasons for enrolment trends in IHL. Here are a number of others :

> Much depends on the educational level of the parents. A number of studies have stressed this as being the most important single factor, but this may be exaggerated. The well-educated parent is also likely to be in a high-income group.
>
> Attitudes towards higher education are important. When the output of college graduates tends to be high, society raises the qualifications required for occupations. In this manner, a rise in supply brings about an increased demand for the services of educated personnel. In turn, young men and women then increasingly seek higher education. The fashion for higher education is also influenced by non-investment objectives, that is, it is also a consumption good which raises the standard of living.
>
> Regional issues are also often decisive. In Greece, Germany, Sweden, France, Japan, the United Kingdom, and the United States (among others), there has been much concern over the

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[1] *Higher Education, The Demand for Places in Higher Education,* pp. 119-120 ; and F. Bowles, *Access to Higher Education,* 1963.

[2] *The Demand for Places in Higher Education,* p. 89.

regional variations in the percentage of college-age population attending college. In the United States, several studies show that there are roughly twice as many students attending IHL in areas within commuting distance as in others. The outlying places are also likely to be low-income areas. In California, a unique programme is to bring virtually every student within commuting distance of a Junior College and perhaps 90 per cent in commuting distance of 4-year colleges and universities.

As a country's economy advances, there is a more-than-proportional increase in the number of highly educated men and women needed, and this rise in demand tends to increase the output of college graduates.

In short, it is easy to envisage that actual enrolment by the early 1970's will exceed the 6 millions estimated for the United States, the 500,000 for the United Kingdom, and the 500,000 for France, and so on. The continued growth of the economy, the raising of the school-leaving age, the democratisation of secondary schools, the cumulative effect of the spread of higher education, the increased availability of premises, teachers, and student aid, the growing needs for highly educated manpower, the reduced attrition of women in higher education, the improved international situation, the increased contribution of the home to the education of children — these and other factors may well raise enrolment in ten years to 7 million in the United States and to 600,000 or more in France and the United Kingdom. Some of the more advanced countries in Western Europe will soon be going through the stage through which the United States has been passing since the end of the war, and hence the relative increases in their enrolment should exceed those of the United States[1].

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[1] In addition to the items mentioned in this section also see OECD, *Greece : Education and Economic Development*, 1964. *Les Problèmes de l'accès à l'Enseignement Supérieur en France*, and *Educational Policy and Planning in Sweden.*

B

CASE STUDIES IN EDUCATIONAL FINANCE AND BUDGETS

8

THE FINANCING OF EDUCATION UNDER A CENTRALISED SYSTEM : FRANCE

André Garcia
Ministry of Education, France

9

BUDGETARY CONTROL AND YARDSTICKS FOR ASSESSING EDUCATIONAL EXPENDITURES IN NORWAY

Kjell Eide
Department of Education, Norway

10

CONTROL OVER EDUCATIONAL EXPENDITURE IN THE UNITED KINGDOM

John Embling
Ministry of Education and Science, UK

11

THE FINANCING OF EDUCATION IN FRANCE, GREAT BRITAIN, NORWAY AND GERMANY

André Garcia
Ministry of Education, France

Chapter 8

THE FINANCING OF EDUCATION UNDER A CENTRALISED SYSTEM : FRANCE

by
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In an economy where educational institutions are for the most part decentralised, and where schools are purely private or depend solely on local authorities, their financial problems may bear some resemblance to those of industrial or commercial enterprises.

The situation is different, however, in a system which is financed to the extent of 80 or 90 per cent from a single source, namely the State budget. The large sums spent and the fact that public money is involved raise considerations of financial and economic equilibrium, easing the burden of taxation, political expediency and choosing between alternative kinds of expenditure. This complicates financial analysis and often limits the funds made available for education.

It is extremely difficult to work out a really rational system for selecting public resources and expenditure, whether for education or for any other major sector. It is difficult to describe clearly, in an economic perspective, a budget procedure which has been drawn up mainly with legal and political considerations in mind. Nevertheless, an effort will be made at the end of this paper to show how educational forecasts and decisions are made in France (i.e. for the Ministry of National Education).

The first part will outline the development of financial principles and the statistics by which they are expressed. It proposes, in fairly general terms, a method for analysing funds and expenditures. This should make it easier to decide among the Draconian financial alternatives of the years ahead.

THE FINANCING OF EDUCATION IN FRANCE

In everyday economic life, the answer to the question : « Who pays what, and why ? » is rarely a matter of rational choice. Sometimes the answer depends on pre-established principles, often on limited technical considerations, and nearly always on an empirical attitude which counts for much more than any hard and fast doctrine.

It is not surprising, therefore, at least initially, if this question is broached and discussed in the language of the sociologist, lawyer or historian, rather than of mathematical equations. It is illusory to try to arrive at a simple formula reconciling all the facts of the matter and to suggest convenient and effective 'recipes' for countries which are still feeling their way towards systems of financing.

This paper tries, therefore, to outline the practical experience of one country, that is, to show how France has financed the development of her educational system and to describe the original solutions devised — solutions which are quite different from those adopted in other countries and from those which France herself has adopted for the development of other sectors, such as railways, national health, or the expansion of trade.

PRINCIPLES OF THE FINANCING OF EDUCATION IN FRANCE

The broad outlines of the French educational system as a public service were conceived at the beginning of the nineteenth century. However, the obligations of the public authorities were only gradually defined, extended, and for the most part concentrated, in the hands of the State.

The main principles underlying current educational policy are contemporaneous with the profound upheavals which transformed every aspect of French society from the end of the eighteenth century onwards. It should also be noted that the State played an even more fundamental role in the development of education than in other areas.

The factors of educational expansion in the nineteenth century were rather different from those of to-day :

— Demand on the part of parents was not the main factor ; on the contrary, throughout the nineteenth century educators frequently met with a certain amount of opposition to compulsory schooling, whether for political (liberalism), religious, or economic (earning of children in working class or peasant families) reasons.

— The training requirements of industry were not exacting, and training on the job was sufficient to provide the relatively small amount of skill necessary.

— The State therefore acted as an essential stimulus. It was partly prompted to do so for humanitarian reasons : its policy replaced that of the Church, whose resources were reduced during the Revolution by the nationalisation of Church property.

In fact the main motives for State intervention were political, i.e. to achieve national unity through culture and language, to create a democracy, enlightened by education, and later the desire of the radicals to resuscitate the ruling classes. Some political leaders, particularly Napoleon, were specifically concerned with the more immediate problem of providing the State with the class of officials it needed to function properly. The creation of the « lycées » and of the « grandes écoles » (Polytechnique, Ecole Normale Supérieure) was partly a response to this problem.

Finally, in the past few years, official policy has also been concerned with economic considerations. This is quite a new development, and the State as a planning authority has not yet weighed all its consequences. Throughout the nineteenth century, France, like the United Kingdom, achieved its industrial expansion with an almost totally illiterate working population ; today, with expansion as one of its responsibilities, the State is concerned with training the executives and technicians necessary for an economy in full expansion.

This new factor, combined with the social need to democratise education, has now replaced the somewhat out-dated political aims of the State. At the same time, the new duties of the public authorities with regard to education involve increasingly heavy responsibilities.

The growing role of the State is reflected not only in a heightened awareness of the need for educational development. Little by little, the State budget is shouldering the considerable costs involved in expanding the educational system :

in an initial phase, the Government, remaining faithful to the concept of the liberal State, was content to promote the development of education by urging local authorities to build schools (Guizot Act, 1833). The only schools placed entirely under the authority of the State were those intended to train future officials (the « grandes écoles » of the Revolution, and the « lycées » of Napoleon). Vocational training was left entirely to the individual firm.

— From the middle of the nineteenth century onwards, State intervention became necessary to ease the financial burden on the local authorities ; grants were made to municipal authorities to build schools and for the payment of teachers' salaries ; scholarships were provided to help the less prosperous families, and free education was gradually introduced in primary schools (1881) and in secondary schools (beginning 1936) ; subsidies for private schools were totally abolished in 1905 by the separation of Church and State, whereby the latter was forbidden to remunerate members of the clergy. These subsidies have been gradually re-instated during the past twelve years.

— Finally the State developed its own educational system by the following means :

the development of public technical education, beginning in about 1890, to compensate the inadequate numbers of apprenticeships in firms ;
the promotion of public higher education ;
the establishment in growing numbers of State lycées to supplement, in quantity and possibly in quality, the network of « departmental » or communal schools.

From the legal and financial points of view, the current system is as follows : on the one hand, there is the public sector which is dependent on the State, or on local authorities which are very generously subsidised (up to about 90 per cent) ; on the other hand, there is the private sector, generally denominational, which is partly subsidised by the State with regard to scholarships (the Marie Act of 1951), operating costs (the Barangé Act of 1951) and teachers' salaries (the Debré Act of 1959).

Phases in educational expansion — the growth in enrolment at schools and colleges can be roughly divided into three main phases :

a) The nineteenth century, from 1800 to about 1890, was mainly devoted to the development and generalisation of primary education. Important acts were passed on secondary and higher education which provided legal foundations and general principles, but did not give rise to an expansion as impressive as that in primary education.

b) The twentieth century, from 1890 to 1950, witnessed a rapid development in education immediately following the elementary school :

the development of higher primary education and the first part of secondary education ;

the introduction and development of public technical education, notably as a result of the Astier Act of 1919.

c) Since 1950 : Educational development, which had been proceeding in a reasonably progressive manner for a century and a half, underwent a sudden change about twelve years ago, when the demand for education at all levels became widespread.

Pressure also increased for the State to assume complete responsibility for education and for matters connected with it.

The objective at which State action should aim is summarised as follows in the preamble to the Constitution of 1946 : « The nation guarantees equality of opportunity for children and adults with regard to education, vocational training and culture. To organise free and non-denominational public education at every level is a duty of the State ».

TABLE 1. EXPENDITURE ON EDUCATION

	IN CURRENT FRANCS (IN THOUSANDS)	IN 1963 FRANCS (IN THOUSANDS)	AS PERCENTAGE	
			OF STATE EXPENDITURE	OF NATIONAL INCOME
1822	5,086	12,715	0.6	0.06
1852	25,679	64,198	1.88	0.07
1902	238,958	645,187	6.69	0.85
1938	5,634	1,915	7.35	1.58
1952	272,924	3,820	6.86	2.55
1963		13,536	14.41	4.86
1964 (forecasts)		14,214	14.58	4.44

The same aim is reflected in the State's financial efforts with regard to education. (Table 1 shows expenditure on education alone, excluding grants for research, culture, information and sport.)

The tendency to treat education as a public service, and above all, as a public service of the State, is becoming more pronounced, as can be seen from the percentages of the Government budget which education represents. A growing share of educational expenditure is therefore governed by the system for the allocation of public money.

CURRENT DATA ON FINANCING

The growth of State expenditure on education

1. School and university enrolment in public education rose from 5.5 million in 1952 to an estimated 9 million in 1964, and to 10.8 million if private education is included.

As is well known, this increase is due partly to the rise in the French birth rate after 1946 and partly to the new attitude of the public towards education. The number of births, which was under 600,000 in 1945, rose to 800,000 in 1946 and has fluctuated around that figure ever since ; the 'bulge' reached infant schools in 1950 and primary schools in 1952.

The demand for education is also evident in the higher percentage of pupils remaining at school after the age of fourteen (4.6 per cent of the age group in 1900, 41.8 per cent in 1950, 68.8 per cent in 1962) or even after the age of sixteen (1.7 per cent in 1900, 14 per cent in 1950 and 26.8 per cent in 1962).

To this increase in overall numbers should be added the effect of shifts in the school population resulting from geographical migration or from educational reform sometimes involving considerable additional expenditure.

2. During the same period, the cost of education has risen. Each pupil or student costs the nation far more than in 1952.

The rise in prices partly explains the inflation of education budgets. Between 1952 and 1962 the index of wholesale prices rose from 100 to 130 and that of retail prices from 100 to 146.6. This trend has obvious repercussions on the cost of goods and services.

Expenditure on personnel is by far the most important item and the one which changes most rapidly. This is due to several factors :

- the need to keep pace with rising prices ;
- salary improvements resulting either from measures specific to the teaching profession or from general measures to enable all civil servants to benefit from the increase in the national income ;
- the creation of posts resulting from the increase in numbers and a slight improvement in teacher/pupil ratios.

In all, the total number of personnel employed under the national education budget rose from 260,000 in 1952 to 540,975 in 1964. In the same period, personnel expenditure rose from F. 1,500 million to 8,200 million or, in indices, from 100 to 546 (current francs).

Present day conditions require better premises and facilities. The improvement concerns matters which are incidental to teaching, such as heating, lighting, meals, upkeep of premises, school transport, as well as teaching material (e.g. audio-visual aids) and pupils' textbooks and equipment (provided free in primary schools due to communal action and which will gradually become so in secondary schools as the result of a budget allocation of F. 14 million in 1964). Some educational innovations are costly in capital equipment or in operating costs, as is the reinforcement of traditional teaching methods. Among these are : school and vocational guidance, educational information, school medical service, administrative staff, expansion of libraries etc. Finally, for some years, scientific research has accounted for an appreciable part of the rise in educational expenditure.

Practically all these new costs are charged to the State, following a policy of transferring expenditure which tends to make the State mainly responsible for educational matters.

3. *Transference of expenditure.* For various reasons, the different sections of the community are tending to put the onus of financing educational development on the State. This policy has the effect of increasing appropriations in the government budget without effecting a corresponding increase in real funds.

Transfers from local authorities. In the « liberal » State of the nineteenth century, which was fairly well decentralised, the local authorities carried the burdens and responsibilities of education. However, the State was soon led to promote educational expenditure by means of grants and even to shoulder some of the costs (e.g. salaries). This process is now tending to become more widespread, notably because of the stable nature of local funds. Each year the State takes on new expenditure as a result of additional schools being placed under its authority, the provision of departmental services, and equipment grants.

Transfers from certain private establishments. The State has been led to subsidise the activities of various organisations which perform educational tasks. From now on such transfers operate mainly in favour of private schools ; in this field, « authorised freedom » has been replaced by « assisted freedom ».

Transfers from industrial and commercial enterprises. The point has often been made that the Industrial Revolution of the XIXth century was achieved with an illiterate labour force. For a long time, apart from a few philanthropic gestures, industry was completely uninterested in training. The State first intervened by introducing regulations concerning apprenticeships and then by providing State technical education. For some years there has been a tendency for industry to abandon vocational training, leaving it to the care of public « centres » in return for the payment of an apprenticeship tax. This means new liabilities for the State budget.

Transfers from families. The need to democratise education has led the State to take action to help the less fortunate families in order to reduce the burden of maintenance and to compensate them for the earnings which children attending school would otherwise bring in. Through the budget for national education, a policy of redistributing funds operates in favour of the family.

This enables money to be set aside by the family for other needs. In the present state of unequal distribution of incomes and in the light of the limited funds of large numbers of families, it seems difficult to ask them to bear the entire cost of their children's education.

The national education budget as a whole is, therefore, increasing for a number of reasons : some of these are linked to a real qualitative or quantitative improvement in educational service, whilst others reflect a transfer of existing expenditure.

Finally, the educational expansion of recent years has resulted in an increase in expenditure which may be explained by a very simple fact : the multiplication of higher unit costs by a larger number of applicants.

Underlying this automatic increase is a long-standing social principle that every individual is entitled to receive from the community the funds needed for his education. In a way, it is the pupil or student who, by presenting himself at an educational establishment, is the real controller of public expenditure ; the situation is somewhat comparable to the operation of the social security scheme where it is the patient who initiates the treatment and repayment procedures. This is not the principle which governs the policy of most social investments (housing, town planning, road building, hospitals) or even other welfare expenditure (e.g. help for the aged).

The social transfers which operate in connection with the financing of education make it a very complicated matter to assess the amount of funds devoted to education by the community as a whole.

A balance sheet of this kind would require a thorough analysis of the real machinery of financing.

SUGGESTED BALANCE SHEET FOR THE FINANCING OF EDUCATION

Theoretical analysis

Funds

Various sources contribute to the financing of education :

- the State ;
- local authorities ;
- educational establishments, having their own funds ;
- certain private institutions such as the Church, various associations and movements ;
- commercial and industrial firms ;
- households.

Various flows of educational funds take place between these sources before any actual expenditure is made. For example, the State subsidises local authorities, schools and households (by means of scholarships). Firms pay an apprenticeship tax to the State. Parents pay examination and boarding fees to schools etc.

In order to describe the financial resources of education two separate tables should therefore be drawn up, one showing the sources of finance and the other showing who is responsible for expenditure.

The first is outlined in Table 2 :

TABLE 2. FUNDS FOR EDUCATION : BY ORIGIN AND END USE

ORIGIN	END USE
Foreign countries : aid received from abroad	*Foreign countries :* aid given to other countries
State : civil and military budget — special accounts	*State :* direct payments
Local Authorities : « Département » budgets, « Commune » budgets	*Local authorities :* direct expenditure, expenditure after transfers
Public teaching establishments : own funds	*Public teaching establishments :* direct expenditure, expenditure after subsidies
Private Institutions : church, trade unions or parties, various associations	*Private Institutions :* direct expenditure, expenditure after subsidies
Firms : apprenticeship tax, grants paid, direct expenditure	*Firms :* grants received, direct expenditure
Parents : subscriptions, tuition and examination fees, direct expenditure on education and maintenance	*Parents :* scholarships or grants received, direct expenditure

The purpose of the first column is to show who bears the burden of financing before allocation ; the second shows who has the purchasing power in educational affairs.

Expenditure

Several systems of classification have been proposed for expenditure, each of which meets well-defined requirements :

- — classification by agents makes it possible to distinguish the proportion of the cost of education accounted for by each of the principal agents in the economy, i.e. public education, private education, industry and commerce, associations, families, etc. This classification is in fact only a more detailed variant of the table of utilisation of funds ;
- — classification by items enables the kinds of goods and services « consumed » by education to be described ;
- — classification by functions enables an analysis to be made of the various tasks accomplished under the somewhat broad heading of education ;
- — classification by levels of education differentiates expenditure by age group and kind of teaching.

In this way a table may be drawn up in which the columns obviously balance with each other and with those showing the amount of funds available.

TABLE 3. METHODS OF CLASSIFYING EDUCATIONAL EXPENDITURE

EXPENDITURE BY TYPE OF GOODS OR SERVICE	EXPENDITURE BY FUNCTION	EXPENDITURE BY LEVELS OF EDUCATION
Salaries and social charges	Administration Teaching	Infant schools
Purchases of goods and services : supplies and furnishings operating costs of schools upkeep of premises food transport	Research	Primary schools
	Post-school education	Special schools
	Sport	Secondary schools (lower)
	Aid to students Social activities Provident fund Accomodation	Secondary schools upper (special)
Capital expenditure land building equipment	International activities	Secondary schools upper (general)
		Higher education (University)
		Higher education (specialised)

Statistics

So far no exhaustive statistics have been compiled but, as part of the preparations for the Vth Plan, a special study group of the *Commission de l'Equipement scolaire* is to look into this problem.

A preliminary rough estimate has, however, been attempted for public education only, in response to the UNESCO surveys on the financing of education. The categories adopted by UNESCO do not tally perfectly with the requirements for a classification of funds and expenditure, but they represent an interesting attempt in this direction.

TABLE 4. FUNDS FOR EDUCATION IN 1961 (public sector)

ORIGIN OF RESOURCES	FRENCH FRANCS *In millions*
Central Government :	
Ordinary budget expenditure (all ministries)	7,401.4
Capital expenditure (Ministry of National Education)	1,619.3
Special primary school appropriations account (Barrangé fund) .	293
Apprenticeship tax received directly by the Ministry of National Education	54
	9,367.7
Local Authorities : (mainly Communes)	1,002.1
Families : School fees and non-fiscal receipts	19
	10,388.8

TABLE 5. EXPENDITURE ON EDUCATION BY TYPE

Millions of French Francs.

	STATE	OTHER AUTHORITIES	TOTAL
A. *Ordinary expenditure*			
Administration	159.5		159.5
Teaching			
salaries	6,114.4[1]		6,114.4
supplies and operation of services	410.1	347[2]	757.1
Miscellaneous			
scholarships	432.2		432.2
other	283.2[3]	759.4[4]	1,042.6
boarding establishments[5]			
B. *Capital expenditure*			
educational expenditure	1,586	261.7	1,847.7
other expenditure (students' hostels)	33.3		33.3
			10,388.8

1. including retirement pensions.
2. apprenticeships tax + Barangé allocation.
3. governmental contributions.
4. non-fiscal receipts, entrance fees, operating costs covered by local authorities.
5. expenditure on boarding establishments is not taken into account since it is not educational expenditure in the real sense, and, is theoretically covered by family payments in the same way as the cost of maintenance of day pupils.

TABLE 6. EXPENDITURE BY LEVELS OF EDUCATION

Millions of French Francs.

	CURRENT BUDGET OF THE STATE	OTHER ORDINARY EXPENDITURE	TOTAL ORDINARY EXPENDITURE I + II	CAPITAL EXPENDITURE	TOTAL (III) + (IV)
	I	II	III	IV	V
I. *Distributed expenditure*					
Primary education	3,816.6	293[1]	4,109.6	484	4,593.6
Secondary education :					
general	1,534.2		1,534.2	358.5	1,892.7
technical	901	54[2]	955	343	1,298
Higher education	692	16[3]	708.3	250	958.3
Specialised training	5.3		5.3	15.1	20.4
Other kinds of education :					
Specialised education	66.1		66.1		66.1
Youth activities and sport	226.6		226.6	53	279.6
II. *Undistributed expenditure*					
Central and academic administration	159.6		159.6	4.5	169.1
Capital investment, Ministry of National Education				112.2	111.2
Authorities' expenditure ordinary		740.4	740.4		740.4
Authorities' expenditure capital				261.7	261.7
Non-fiscal receipts		2.7	2.7		2.7
			8,507	1,881	10,388.8

NOTES :

Column I : Breakdown of the current budget of the State.
Column II : 1. Barangé fund — share allocated to public education.
2. Apprenticeship tax.
3. Entrance fees — Baccalauréat.
Column IV : Breakdown of the budget voted for national education.

Evaluation of the cost of private education. The information available on private education is still inadequate. An estimate has therefore been made based on the unit costs in the public sector.

TABLE 7. ESTIMATES OF PRIVATE EDUCATIONAL EXPENDITURES

	NUMBER OF STUDENTS	UNIT COST	EXPENDITURE *millions of Francs*
Primary	1,097,000	496	544.112
Secondary	486,000	1,338	650.268
Technical	145,000	2,031	294.495
Higher	20,000	2,400	48.000
			1,536.875

The following known sources of finance are derived from the State and from commercial and industrial firms :

	millions of Francs
Quarterly primary school allocations to private establishments	55
Operating costs covered by the State	200
Payments by firms in lieu of apprenticeship tax	67
	322

Most of the remaining financial requirements are met by parents.

Although these estimates are interesting, they still suffer from the shortage of statistics. The splitting up into institutions, which prevents the problem from being grasped as a whole, adds other difficulties. A much more careful analysis is therefore needed to assess financial prospects with a greater degree of accuracy.

CONCLUSIONS

The State's assuming responsibility for educational policy has undoubtedly led to a rise in expenditure. The inclusion of investment in schools and universities in an overall plan has considerably contributed to this increase, and there is no doubt that such an increase would not have come about had requirements been met on a day-by-day basis during discussions on the budget. Nor is there any doubt that, in view of the uneven distribution of incomes, the demand for education would have been much lower had it not been stimulated by a century of efforts to make education more democratic.

So far, these new responsibilities have not raised any serious problems from the point of view of public finance. Within the next ten or twenty years, however, this situation may change ; the procedure for allocating public funds, which was designed for other purposes, may become too rigid for a rapidly expanding budget involving large figures. The experience of the IVth Plan showed how difficult it was to control the growth of private consumption, and in order to avoid inflationary pressures the Government is naturally inclined to limit the rise in public expenditure. Education is treated not only as an end but also as a means of financial policy. This is scarcely to the benefit of a sector which should normally increase much faster than public expenditure as a whole and, a fortiori, than private expenditure.

In view of this situation, one may question whether, to meet the demand for education promptly, it will not become necessary before long the abandon this almost total dependence on the State budget as the one source of finance. One solution might be to ask local authorities, industry and parents to make an extra effort to support education (since they all have a strong interest in it) and to set aside a proportion of the foreseeable increase in their income for the needed expansion of educational facilities.

In such a case, a direct tax would be a perfect device for absorbing increments of income. The psychological limitations attached to a direct tax could be overcome by using a financial procedure whereby there is a more or less direct link between the rendering of a service and the payment of a tax. From the point of view of democratic education, it is not essential for the money to come from the State. What is important is that there should be enough funds administered by public bodies for the good of the greatest number.

PREPARATION OF THE EDUCATIONAL BUDGET IN FRANCE

INTRODUCTION

Preparing the budget for education involves a large number of highly complex operations, and processing a great amount of information relating, in 1964, to about 550,000 civil servants and a total outlay of about 14 thousand million francs.

The budget has a dual character :

a) It is an instrument of *authorisation,* fixing the limits within which the Minister may commit public finance, and approving a programme of action clearly defined by budget priorities. There is a distinction between two major groups of appropriations : services already voted and new measures. « The services already voted represent the minimum appropriations which the Government judges indispensable for the continued operation of public services along the lines approved the previous year by Parliament ».

Proposals for new measures, however, are approved Ministry by Ministry and section by section. Expenditure by the Ministry of Education is divided into four sections :

Section III : current expenditure (staff, supplies and operation)
Section IV : official grants (scholarships, grants-in-aid for students, etc.)
Section V : official capital investment (purchase of buildings, construction work, heavy equipment)
Section VI : government subsidised capital investment.

Each of these sections is voted separately. As the gross amounts are large, Parliament requires to be fully informed by various explanatory annexes, with details of the measures presented chapter by chapter.

b) It is an instrument of *executive* authority : it lays down compulsory form for the accounts of the Minister and the officials responsible for implementing education policy. The chapter is the basic element for the execution of the Budget. Although only the gross amounts of expenditure, set out in the sections, are voted, the Government undertakes to respect the breakdown of appropriations by chapter, as shown in the annexes. Some changes may be made during the year by means of transfers of appropriations, but these may not exceed one-tenth of the appropriations in that chapter. Long before the Budget is voted, therefore, requirements may be estimated with extreme accuracy even as regards detailed measures. This indicates the importance of the procedure which will now be examined.

PREPARATION OF THE DRAFT AND FINAL BUDGET

At the beginning of March the Ministry of Education is requested by the Ministry of Finance to submit proposals for a draft budget, in the light of the general principles of Government policy defined by a meeting of the Council of Ministers (conditions of general financial equilibrium, priority of certain ministries, etc.).

Estimates are prepared for :

Ordinary expenditure

Proposals based on the increase in the school population

- an estimate is made of the school age population expected for the next school year (new measures in the 1965 budget will make it possible to admit the extra numbers expected for the school year beginning in October, 1965). The estimated school age population is broken down according to the various levels of education, as the costs involved differ ;
- by simple arithmetic the funds assigned to the 1964 school population are increased to cover these extra numbers.

Proposals for the improvement of services

These represent what the Government considers it can do to improve teaching conditions for the benefit of the whole school and university population, notably :

- creation of posts ; to improve the teacher/pupil ratio, or to undertake new activities (documentation, vocational guidance, administrative help, etc.) ;
- better staff pay ;
- increase in appropriations for supplies and operating expenses for establishments ;
- public aid to families (scholarships, assistance to students, school transport, free books, etc.) or local authorities (assumption by the State of financial responsibility for local educational establishments or facilities).

Capital expenditure

The first category of proposals is based on the growth target fixed by the Four-Year-Plan. No binding annual time-table is laid down and appropriations for capital expenditure are discussed each year in the light of the economic conjuncture, requirements and current school building projects. During the Fourth Plan, the sum of F 12,000 million was divided among the various levels of teaching for capital expenditure.

The second category of proposals may lead to the revision of the Plan targets, for example :

- — an underestimation in the Plan of certain factors, such as the drift of population towards big towns, involving new school requirements ;
- — unexpected change in school age population : for example, arrival of French citizens repatriated from overseas ;
- — reforms involving changes in the educational system ;
- — the effect of price increases on the unit costs calculated in the Plan.

After considering all the proposals, the Minister of Education, keeping in mind the political or technical desirability of developing a particular type of activity, decides on the amount of proposed expenditure, and informs the Ministry of Finance. Points of disagreement are considered at ministerial level and, if necessary, referred to the Prime Minister for decision. The Prime Minister fixes ceilings of expenditure for each ministry, in the light of overall economic and financial equilibrium and also the value of the proposed measures. It might be mentioned here that education has, for several years, benefited from a certain political priority.

At the end of June, the Prime Minister announces his decision, consisting of two figures : the ceiling of expenditure and the number of posts to be created. He may also state that a particular major category of measures should be retained or deleted.

A detailed draft Budget is then prepared, comprising under :

Ordinary expenditure

- — measures connected with administrative changes : creation of posts and appropriations for operating costs ;
- — measures affecting the staff : status and emoluments ;
- — total number of scholarships and their average value ;
- — adjustments to meet requirements ;
- — transfers between services ;
- — savings.

Capital expenditure

The ceiling having been fixed, the Minister of Education divides expenditure according to levels of instruction : scientific research, higher education, secondary education, primary education, youth and sport, sundry equipment.

Each level of instruction is sub-divided. The Minister fixes the amounts of appropriations allocated to each type of equipment, but the directorates prepare the work for the operational programming.

Prior to the preparation of the Budget, the Central Administration asks the responsible commissions — local, départemental, regional or central — to present requests for work to be done, representing in all about 125 per cent of the appropriations expected. This list of requests constitutes a group of projects which might be financed. The whole list of detailed measures, with justifications and precise figures, both for ordinary and for capital expenditure, is then sent for consideration to the Secretariat of State for the Budget.

An important point to be noted is that, at this stage, should the Ministry of Finance oppose the appropriation, it can be assigned by the Ministry of Education to another section, within the limit of the ceilings fixed.

The draft Budget (« blue book ») is then prepared at the end of August (to be tabled in the Assemblies at the beginning of October), consisting of :

- a document analysing both the services already voted, and new measures presented by sector, service, and category ;
- a statement of accounts summarising by chapters the services already voted and the new measures proposed by the Government ;
- various explanatory annexes for which the Ministry of Education is asked to supply information with relevant figures, reports on the regional allocation of investment appropriations, on the cost and performance of public services, etc.

After examination in Parliamentary Committees, the Budget is debated and amended by Parliament in plenary session (October-December), and, once approved, is promulgated as a Finance Act by the President of the Republic[1].

The final Budget document (« green book »), representing the administration's programme of activities for one year, is then published.

CONCLUSION

The administration, when formulating estimates in new spheres where there is no budgetary precedent, is hampered by inadequate knowledge of unit costs, personnel statistics, population movements, etc. In this connection it is planned to formulate a system of accounting better adapted to economic analysis ; a specialists group of the Equipment for Schools, Universities and Sports Committee will study this question when the Fifth Plan is in course of preparation.

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[1] The Budget year begins on 1st January. This is somewhat inconvenient for the Ministry of Education, which is mainly concerned with the re-opening of schools at the end of September. Another less apparent disadvantage is the fact that, owing to the time needed to prepare building programmes, a considerable amount of commitment authority is released on the market from September onwards, whereas more favourable prices would be obtainable in February.

There is less freedom of choice than is generally thought. Very few supplementary items are approved outside the large totals of the National Education Budget each year ; also, at least two types of measures are subject to a fairly rigid procedure : services which have been already voted, and new measures dictated by increased enrolment. This semi-automaticity has undeniable advantages for national education, but, in view of the volume of the appropriations falling under these two headings, it also has the disadvantage of limiting really new activites.

The Budget is not an isolated phenomenon in the life of the nation to be brought up for examination each year. Major decisions are taken outside this annual review, for example, every four years under the equipment plans, and also, more irregularly, as ideas concerning education and the services it offers develop.

Chapter 9

BUDGETARY CONTROL AND YARDSTICKS FOR ASSESSING EDUCATIONAL EXPENDITURES IN NORWAY

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INTRODUCTION

The purpose of this paper is to analyse the system of budgetary control from the point of view of the central government, and in particular the Ministry of Education.

This system of control should not aim only at ensuring proper use of government funds in accordance with stated purposes but also constitute an important instrument for steering developments in the whole field of education in line with government long-term objectives. As will be seen, the present system is not in all respects well suited for the latter purpose. An attempt is made, therefore, in the last section of the paper, to illustrate how new yardsticks for financial control could be developed to make government grants and subsidies more effective as instruments for promoting the balanced implementation of long-term plans.

Before embarking upon a description of the present system of financing education in Norway, it may be useful to outline the structure of the civil service, and the division of educational responsibilities among the different authorities.

THE STRUCTURE OF THE CIVIL SERVICE IN NORWAY

Norway, a country of just under 4 million inhabitants, is divided into 20 counties with from 75,000 to 500,000 inhabitants (average nearly 200,000), and about 500 « communes », (or parishes) ranging in size from fewer than 1,000 to as many as 10,000 inhabitants (average 7,500). The two biggest towns, Oslo and Bergen, are communes with county status.

A fact of the utmost importance for Norwegian educational policy should be noted at this stage : it is a country with an extremely scattered population. The average population density is about 4 inhabitants per square mile. One county with a land surface larger than that of Denmark has only 75,000 inhabitants. Whole communes may be unconnected by road with the rest of the county, or the different centres of a commune with each other. Communes along the coast may also consist of several hundred inhabited islands, scattered over a large area.

There are also major regional differences both in economic conditions and cultural traditions, ranging from the international pattern of cultural life to be found in the capital to that of the Lapponian nomads in the North, and from highly industrial centres to economically backward areas on the Western and Northern coast and in the mountain regions where fishing, hunting and farming may still follow century-old traditions.

The communes have their own sources of tax revenue. However, the responsibilities assigned to the communes by law, especially concerning education, health, services, road construction and maintenance, etc., require means far beyond their own financial resources. A large scale transfer of funds from the central government is therefore necessary if the communes are to carry out their functions. A policy for levelling out the substantial differences in the fiscal capacity of the individual communes is the main reason for this system of financial transfer, which, of course, at the same time provides the central government with wide opportunities for controlling the policies of local authorities.

The counties have only negligible sources of tax revenue and receive the main bulk of their funds from central government and the communes. In comparison with the central government or the communes, the counties' share of public funds is relatively small.

Neither the central government nor the counties have any influence on the local election of political bodies responsible for educational matters within the individual commune, or on the appointment of administrative staff at the commune level. Political bodies responsible for education at the county level, are also elected without interference from the central government, but administratively these bodies are served in each county by a school director, who is appointed and employed by the central government. Detailed control of pedagogical, personnel and financial matters is to a great extent delegated by the central government to the county school directors, who in many respects may be regarded as local branches of central government educational administration.

At the central government level, the Ministry of Education plays a dominant role in educational administration. In a few exceptional cases certain types of vocational schools are attached to other ministries, the most important being agricultural schools which, even at university level, come under the Ministry of Agriculture, military schools under the Ministry of Defence and fishery schools under the Ministry of Fisheries.

THE DIVISION OF RESPONSIBILITIES FOR EDUCATIONAL ADMINISTRATION AMONG DIFFERENT AUTHORITIES

The *communes* are responsible for ordinary schools at the primary and lower secondary level. This also includes a major part of vocational education, especially courses of relatively short duration in the usual subjects.

The *counties* are normally responsible for general secondary schools at the higher level (*gymnas* — age group 16-18 years). A few gymnasia are, however, still run by the communes. Vocational schools with more extensive programmes, such as schools for training technicians in industry and agriculture, are also normally owned by the counties.

The *central government* is responsible for institutions at university level, including all types of teacher training, schools for social workers and medical personnel, military schools and a few other institutions for special vocational training. In addition the central government is fully responsible for the special schools for handicapped children at all levels.

Private schools constitute a very small sector of Norwegian education, in financial terms perhaps 2-3 per cent of the total expenditure on full-time education.

General secondary education with the same type of syllabus as that of the state schools is offered by half a dozen small private schools. More important are a number of *Folkehogskoler* — run by voluntary non-profit-making organisations — offering shorter courses (1-2 years) at secondary level to some 5 per cent of the age groups at this level, mainly in rural areas.

Private vocational schools are more frequent, offering mainly shorter courses in commercial subjects, home economics and various scattered fields. Correspondence schools are all private ; some of the biggest, however, are run by non-profit-making organisations for adult education.

THE PRESENT SYSTEM OF FINANCING EDUCATION BY THE CENTRAL GOVERNMENT

General remarks

Total public expenditure on education in Norway in 1964 amounted to approximately Kr. 2,500 million (slightly more than 5 per cent of GNP). Since private schools are rare, and State schools do not charge fees, this corresponds approximately to the total current and capital expenditure on schools in Norway. Expenditure is provided about equally by the central government on the one hand, and the communes and counties on the other.

Some Kr. 100 million are transferred from central government funds (8 per cent) to the private sector in the form of stipends, rent-free loans, free transport, accommodation subsidies and other welfare measures for pupils and students. Grants to private schools amount to less than Kr. 15 million. About Kr. 600 million (50 per cent) are transferred to the communes and counties for schools under their administrative responsibility. The rest, some Kr. 500 million (40 per cent), represents expenditure on institutions run by the central government itself.

The counties and communes thus have at their disposal some Kr. 1,300 million from their own financial sources, and Kr. 600 million transferred to them by the central government to spend on education.

Transfers from counties and communes to the private sector are relatively insignificant.

The transfer of funds from the central government to the counties and communes is part of a general policy to compensate for differences in local fiscal capacity, and the total amount of transfers for educational purposes is at least partly determined by such considerations. Correspondingly, the size of transfers in other fields of policy (social services, transport, etc.) is also influenced by this general policy of financial levelling. In addition to such transfers for specified purposes, financially weak communes receive non-earmarked support from the central government (some Kr. 120 million annually). This policy for strengthening the budgets of a number of communes may well result in more expenditure for educational purposes by the local authorities concerned.

Indirectly, similar results are obtained through major government programmes for the central financing of regional industrial development, and through the activities of the government bank for loans to the communes. This policy of regional redistribution of financial resources has undoubtedly increased the possibilities of local authorities for financing education in economically weak areas, although this cannot be quantified in exact terms.

COMPULSORY EDUCATION

Norway is in the process of extending the period of compulsory education from 7 to 9 years, i.e., from 14 to 16 years of age. About 100 communes have introduced this measure which will be adopted throughout the country by approximately 1970.

The Ministry of Education is legally authorised to decide on the basic curriculum and to define minimum requirements for the number of hours taught in each subject. Minimum and maximum numbers of weekly teaching hours, i.e., teaching periods of 45 minutes per class are determined by law, as is the number of school weeks per year[1]. The maximum class size is fixed at 30 pupils.

Teachers' salaries are fixed by negotiation between teachers' associations and the central government, the same scale being applied all over the country. While the general level of teachers' salaries as compared with those of other civil servants is the affair of the Ministry of Prices and Wages, the structure of the salary scale is mainly the responsibility of the Ministry of Education, and contributes an important instrument in educational policy (encouraging teachers to improve their professional qualifications, breaking down traditional status barriers between groups of teachers with different training, etc.). The Ministry of Education controls the proper application of the salary scale through the county school directors.

The numbers of hours to be taught weekly by teachers in the different categories are determined through the same negotiation process, and the reduction in the teaching load for school directors and teachers with other administrative tasks is stated in broad terms.

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[1] The present law requires a minimum of 117 and a maximum of 192 periods throughout the 7 grades, and a school year of 38 weeks. Communes wanting to extend the period of compulsory education to 9 years must provide 123 weekly teaching periods for the 6 lowest grades (1st-3rd grade 15 hours, 4th and 5th grade 24 hours and 6th grade 30 hours).

Finally, the standards of school buildings, equipment and teaching are controlled by the county school directors from a pedagogical point of view.

Central government grants to communes are made for five specified items in compulsory school budgets : teachers' salaries, pupils' transport, pupils' accommodation, equipment and school construction. The form of the grant varies from item to item.

Teachers' salaries are subsidised up to a certain percentage ; the cost is calculated on the basis of the number of hours taught and the average salary per hour. The percentage varies between 30 per cent and 85 per cent according to the fiscal possibilities and special educational tasks of the local authority concerned. The subsidy percentage is fixed for each commune for a period of 3 years. On the average, close to 60 per cent of teachers' salaries are refunded by the central government.

Transport and accommodation costs for pupils in compulsory schools are fully covered by the authorities. The communes are subsidised by the central government according to calculated standard costs at the same percentage rate as for teachers' salaries. On the average, 65 per cent of transport and accommodation costs are refunded[1].

Equipment expenditure by the communes is subsidised by a minor sum per pupil. The contribution of the central government is marginal in relation to actual equipment expenditure.

Until recently the communes carried the full financial burden of school construction at the compulsory level. However, the problems facing economically weak communes in connection with the introduction of 9 years compulsory education, and the corresponding increase in teaching strength in lower grades, have forced the central government to reserve certain funds (Kr. 40 million) for grants for school construction at the request of the communes, and each individual case is judged in relation to actual needs. The contribution of the central government, however, still constitutes less than 20 per cent of the expenditure by the communes under this budget item.

The government bank for loans to communes plays an active part in financing school construction[2] and imposes certain school building standards on communes receiving loans. The required approval by the Ministry of Education or the introduction of 9 years compulsory education in individual communes also provides an opportunity for controlling local policies in this respect, e.g. as regards the location of central schools for the 7th and 9th grade.

The total volume of school construction at all levels is controlled through general building regulations, which lay down each year a quota in square metres of the new schools to be built by the communes. In addition, each county disposes of a minor quota for specific types of buildings, including schools. In recent years financial resources have been the limiting factor for school construction, and the rather liberal quotas have not been exhausted. A drastic increase in school construction in 1963, caused mainly by communes wanting to introduce 9 years compulsory education, made the building quota effective as a regulating mechanism in 1964.

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[1] Transport and accommodation costs per pupil are normally higher in communes with a higher subsidy percentage.

[2] Loans for school construction in 1963 amounted to Kr. 70 million.

An evaluation of the present system of central government participation in the financing of compulsory education leads to the following conclusions :

The considerable differences in the subsidy percentages and the selective support given to school construction have done much to equalise conditions. This is clearly demonstrated by the fact that 9 years compulsory education is now being introduced as rapidly in the economically weak as in the more wealthy areas.

The present general level of support is hardly necessary to obtain this equalising effect. It does, however, provide a considerable stimulus for the extension of compulsory education and the number of weekly teaching hours offered at all levels. Certain side effects are noticeable, such as an increase in the number of extra teaching hours spent on pupils who have difficulty in following the normal progress of their class. It may also be mentioned that the recent extension of the refund regulations to include counselling staff's salaries has led to a rapid increase in counselling services in Norwegian schools.

The weakness of the present system lies in the unselective stimulus it provides to increase the number of teaching hours. Traditionally, the refunding of increased salary expenditure is refused and the central government's legal authority to refuse refund on other grounds is doubtful[1]. While the minimum requirement for 9 years compulsory education is 123 weekly hours for the 6 lower grades, the wealthier communes normally offer 156. From the Ministry's point of view, an extension beyond 140 weekly hours has a relatively low priority, partly due to pedagogical reasons and partly to the present shortage of teachers, but developments in this respect are out of control. To some extent, the same may apply to the tendency in wealthier communes to split classes in certain subjects, with a subsequent increase in teachers' salaries to be refunded and in the total demand for teachers.

Furthermore, the present system of refunding salary expenditure does not take into account the considerable differences in the effective utilisation of teachers in the various types of schools. By carrying almost the full burden of teachers' salaries in economically backward areas where the present school system is most wasteful[2], the central government has lifted any financial pressure on the communes to rationalise their school system and to aim at a more economic use of available teaching resources.

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[1] Below the maximum limit of weekly teaching hours laid down by law. Neither has the Ministry legal authority to restrict the number of teachers employed by individual communes. Regulations in line with British practice are being considered at the moment.

[2] Legal minimum size of a primary school : 6 pupils.

As the communes are legally responsible for providing transport and accommodation for pupils receiving compulsory education, grants from the central government for this purpose have no major effect on the extent of the services offered. These grants directly aim at facilitating a more rational school system, with a more economic size of school unit. Since the highest refund percentage (85 per cent) is normally applied to communes with a scattered population and an uneconomic school system, it seems reasonable to assume that the recent trend towards rationalisation is at lease partly due to the form of this grant.

The small, unselective grants for equipment were important at the time when the principle of free school material was introduced in Norwegian compulsory schools. Today their impact on equipment standards are negligible, even where such standards are still low, and it is difficult to see any reason for maintaining them, at least in their present form.

The relatively limited grants by the central government for school construction have a definitely levelling effect due to their strict selectivity. Thus, as the total volume of school construction is controlled by other means, the main weakness in the present system is a lack of central control of construction costs in relation to value. More extensive work initiated by the central government on the development of appropriate standards for school buildings is thought to be the best way of helping the communes to build schools more economically.

SECONDARY EDUCATION

There are four main types of general secondary education in Norway. At the lower secondary level, pending the completion of 9 years compulsory education, there are still the *realskole* — leading on to the *gymnasium* at the higher secondary level — and the continuation school. At the higher secondary level, there are the *gymnasia* — qualifying for students at university level — and about one hundred *folkehogskoler* of up to two years' duration. By and large regulations similar to those mentioned above for compulsory schools also apply to the different types of secondary schools. There are, however, considerable variations in the form of financial support given by the central government.

Central government grants to communes for continuation schools are given on the basis of the approved budget for each school. In rural areas, the grants amount to 75 per cent of teachers' salaries, 75 per cent of other specified types of operating costs, 50 per cent of school equipment, 50 per cent of pupils' transport and accommodation according to standard costs, and a small amount per pupil for individual teaching material. In towns, the grants are limited to teachers' salaries — 33⅓ per cent — and grants per pupil for individual teaching material.

Grants to communes for *realskoler* are given on the basis of a fixed sum per class, at a level comparable to that of the central government's contributions to primary and continuation schools in the towns. A number of temporary courses run by the communes with *realskole* curricula, but without graduation rights, receive small lump sum grants from the central government.

Central government grants for *gymnasia* are given to counties and, in certain cases, to communes according to the refund percentage fixed for each county, ranging from 30 to 75 per cent. The refund is based on the calculated standard costs per pupil.

There is a countrywide plan — approved by Parliament — for the location of *gymnasia,* and this constitutes an additional criterion for the Ministry of Education when approving expenditure to be refunded. Communes wishing to establish *gymnasia* at places not included in this plan, and without the approval of the county concerned, are likely to be refused a grant from the central government.

Grants for the construction of *gymnasia* may be made from central government funds. The recent transfer of a number of *gymnasia* run by the central government to the counties was accompanied by certain grants of this type.

Grants for *folkehogskoler* are given to counties or private organisations on the basis of approved budgets, and amount to 5/6ths of operating costs.

Assistance is given to eight private schools at the *realskole* or *gymnasium* level by the central government ; an overall sum of Kr. 1 million is allocated on the basis of individual evaluation. Schools of this type have no general right to assistance ; it is granted annually on the strength of their contribution to education either in the form of special pedagogical achievements, or because they fill a gap in the State school system.

Communal or county vocational schools at secondary level are given financial support by the central government under the same rules as the *gymnasia.* The calculated costs per pupil are mostly higher than in the *gymnasium,* due to the considerable equipment and space requirements, and smaller classes. In some of the more important types of vocational schools, costs per pupil are twice as high.

Central government grants are also made for equipment in vocational schools, mostly in connection with the construction of new schools. These grants, amounting to some Kr. 11 million in 1964 have proved to be an effective means of stimulating local initiative in this field.

35 private vocational schools receive grants from the central government amounting to about Kr. 3 million allocated on the basis of an assessment for each. In principle, the position of these private schools is similar to that of private general secondary schools. In practice, it is more solid as in most cases they give specialised training not provided by State schools.

In a number of fields of specialised vocational training — usually where one or two schools are sufficient for the whole country — the schools are operated directly by the central government ; they are mostly small and the total appropriations relatively insignificant. The budgetary procedures are very similar to those applied to the universities.

The system of central government aid to the *realskole* and continuation schools is a remnant of an old grant system ; it is due to disappear in a few years and is hardly worth commenting on. In general, the central government's assistance to schools providing nine years compulsory education is more generous than to these older forms of school, a fact which has not escaped the communes when considering which school system to choose.

The present system of central aid to *gymnasia* and vocational schools has only recently been introduced, and it is too early to judge its effect. It is doubtful, however, whether the levelling effect of the grant system will be sufficient to remedy the present shortage at this level in certain areas. On the other hand, the expansion of school capacity in *gymnasia* in wealthier areas seems beyond any real control ; this threatens both the teaching standard of the *gymnasia*[1] and the balance between general and vocational training at this level.

The fact that central government aid is given on an equal percentage basis for *gymnasia* and vocational schools at the same level, in spite of the much higher costs per pupil in the latter, may be a reason for the local authorities' expansion of *gymnasia*. The central government finds it difficult to convince local authorities that expansion of vocational schools is needed, in spite of grave shortages of school capacity, whether to meet the needs of applicants or of the economy.

The strong support given by the central government to *folkehogskoler* is partly due to the important part they play in rural districts owing to the lack of space in the *gymnasia* in these areas. More important perhaps is the generally favourable political attitude towards this type of school in Parliament. It is difficult to see how support at this level can be justified in the long run when a more adequate offer of schools of other types is available to rural youth. In addition, the detailed control of school budgets required by the present form of central government aid is impractical.

The whole system of education at the higher secondary level — both general and vocational — is at present being reconsidered, and a major reform is foreseen. It is important in this connection to find a more flexible system of central government grants to counties and communes for schools at this level, so as to obtain a more effective instrument for promoting desirable local developments in this field.

THIRD-LEVEL EDUCATION

Third-level education in Norway is fully financed by the central government. Administratively there is a difference between the universities, on the one hand, and teacher training colleges, welfare work schools, etc., on the other, the former having a higher degree of independence than the latter[1]. This has a certain bearing on the possibilities of controlling expenditure in relation to value, but the budgetary process is largely similar in the two cases.

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[1] In Oslo and Bergen, close to 40 per cent of the corresponding age group attend *gymnasia* and in certain districts of these towns the enrolment is close to 60 per cent. This should be compared with a national average of 17.5 per cent and 7-8 per cent in certain countries.

Budget appropriations are determined on the basis of very detailed budget proposals from the individual institutions, and are specified in nearly as detailed terms. Each new post is specified, and, above a certain level, the appointment is made by the government. Separate appropriations are given for different types of running costs, equipment, maintenance, each new building, purchase of ground, etc. Deviations from given budget specifications require approval by the Ministry of Education[2], and, where the deviations are important, by Parliament.

The syllabuses of the various faculties at the universities — or rather the requirements for the degrees awarded by them — are defined in broad terms by law. The Ministry of Education (or Agriculture) approves the detailed curricula. The Ministry cannot, however, order a university to provide a specific programme, or to undertake a specific research project.

The construction of new university buildings is the responsibility of a separate Directorate for public buildings under the Ministry of Finance. The universities formulate their specific needs in connection with new buildings projects, and Government appropriations are based on calculations made by the Directorate.

Norwegian universities have some small funds of their own and occasionally receive minor endowments. However, the resources play an insignificant part in financing university education and research. The same applies to the small grants provided by different research foundations. The grants from the three research councils, which finance perhaps one-third of the research activities in Norwegian universities, are, however, of considerable importance.

The research councils are appointed by the government and consist of representatives from research institutions, industry and the civil service. They dispose of their funds — mainly consisting of the profits of the state-owned football pools — on the basis of recommendations from a large number of expert groups in different fields of research. Although, in principle, the budgets of the three councils have to be approved by the government, this procedure has never led to any changes in the budgets proposed by the councils.

Until four years ago administration at ministerial level of third-level institutions was based on a detailed knowledge of the few institutions and even the personalities concerned within the universities. This system could function only because the total student population in Norway at that time did not exceed that of a medium sized university. However, recent developments[1] have led to a partial breakdown of this administrative system, while no adequate new system has been developed as yet.

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[1] Based, among other things, on the traditional right of the universities to elect their own governors.

[2] Or, in the case of agricultural institutions, from the Ministry of Agriculture.

A 10-year plan for the expansion of Norwegian universities was prepared in 1960 and approved in principle by Parliament in 1962. This plan — based partly on the expected student inflow and partly on assumed demand for qualified manpower — applied certain rough standard relationships between numbers of students, teaching staff, space and running costs in different fields of study. It has, in fact, become the main basis for government decisions on appropriations to universities, any proposed deviation from the plan requiring careful justification in order to obtain approval.

However, the very approximate standards applied to the 10-year plan need considerable adjustments. Furthermore, the basic assumptions underlying the plan, especially in terms of student inflow, need substantial corrections. No systematic procedure for adjusting the existing plan to new circumstances has, however, been established, Thus the plan, which initially did much to further a general understanding of the need to expand Norwegian university education, is now on the point of hindering the development of a flexible policy for facing new tasks in this field.

EXAMPLES OF MORE ADEQUATE INSTRUMENTS FOR CONTROL

As suggested in the introduction to this paper, and indicated in the criticisms made when describing the present control system, it might be possible in certain cases to develop instruments for financial control more likely to serve the general objectives of educational policy. A few suggestions are given below as to how this could be achieved in the context of the Norwegian educational system.

COMPULSORY EDUCATION

An appropriate system of financial aid to the communes for compulsory education should : achieve the same levelling effect as at present ; limit low priority use of teaching resources (wasteful organisational structure, excess offer of teaching hours), but still leave the communes a certain freedom of choice ; stimulate local expenditure for high priority purposes when required.

These requirements may possibly be met by a policy along the following lines :

Teacher salaries should be subsidised according to calculated standard expenditure, based on a fixed teaching-hours-per-pupil coefficient. This coefficient should represent a type of school with reasonably high teaching standards, but also good economy in the use of teaching resources.

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[1] Norway now has three universities, and a fourth is being planned. In addition, there are four other institutions for specialised training at university level (commerce, agriculture and forestry, veterinary medicine and architecture). The total student body today amounts to 18,000 and is expected to increase to 30,000 towards 1970.

This would leave a certain amount of freedom to the communes for choice between alternative uses of government-subsidised teaching resources — increasing full-class teaching hours, splitting up classes in certain subjects, and combining them in others), increasing extra teaching for pupils needing additional aid, lowering average class size or even maintaining an uneconomic school system. But if a commune wants to do all these things simultaneously, it will have to do so at its own expense.

In communes where natural conditions prevent an optimum school system, this should be accepted as an additional criterion for determining the refund percentage, which, in exceptional cases, might exceed 100 per cent (of *standard* teacher salaries).

From the point of view of educational policy the present average refund percentage might well be reduced. This could lead to a level of support to wealthy communes which would reduce even further the already rather limited impact of government support on their policy. A legal maximum limit to the use of qualified teachers by the communes may, therefore, be necessary, e.g. in terms of a minimum number of pupils per qualified teacher.

The present system of aid for pupil transport and accommodation seems effective, but the subsidy for free teaching material might be abolished. In view of the rapid development of teaching technology, however, it might be worth while considering a system of selective financial aid for the purchase of specified types of modern school equipment. The percentage refundment for that standard expenditures for such clearly defined purposes might be the same as applied to expenditures on teachers, transport and accommodation.

The system of aid for school construction, based on an examination of each case, should be maintained and possibly reinforced by increased appropriations.

UPPER SECONDARY EDUCATION

The present system of central government for schools at this level — based on standard costs per pupil — meets some of the requirements mentioned in connection with the system for compulsory education. If sufficient pedagogical control of teaching standards in general is provided, and appropriate adjustments of standard costs according to changes in prices and wages and higher standard requirements are made, this system should function effectively as far as school economy is concerned.

The work done hitherto at county level for the establishment and location of upper secondary schools as part of a general plan for the whole country should be followed up and made part of a continuous planning process. The administrative procedure involved should allow the Ministry of Education to exert a certain control over these local educational developments.

One major problem remains to be solved : how to regulate educational expansion at this level to achieve a proper balance between different types of general and vocational schools within the framework of available financial resources.

It may be advisable to consider variations in the percentages of subsidies for operational costs of the different types of schools to modify the effect on local policies of substantial differences in costs per pupil. In addition, it may also be necessary for the Ministry of Education to limit for each county the number of pupils in each type of school for which the central government will undertake to refund expenditures by counties or communes. Such limitations should aim mainly at a better balance between the different types of education offered in each county, and should not be used to maintain existing differences between the counties.

An important matter is, of course, the central government's basis for deciding what is proper balance between the different types of education at this level. This is possibly the most vital issue in educational planning and can hardly be discussed in this context.

THIRD-LEVEL EDUCATION

In order to obtain a firmer administrative grip on developments in third-level education in Norway, a policy along the following lines is suggested[1] :

By means of negotiations with the universities and other institutions concerned, a set of standard coefficients should be worked out, linking the main items in the current budgets of each institution to the actual number of students. Agreed minimum teaching standards should determine the number of teaching hours per student at different levels of teacher qualification. Existing rules regulating the teaching obligations of each category of professional university staff would then make it possible to « translate » a given number of students in a specific subject into demand for teaching staff of various types.

Existing rules on teaching obligations allow — and should continue to do so — considerable freedom for professional university staff to engage in active research. Certain minimum standards of research facilities should be estimated in the way of funds for auxiliary staff[2] immediately following the establishment of senior research posts. A minimum amount for other expenses in connection with teaching and research should be linked to the establishment of such posts.

This set of standard coefficients would determine the minimum standards for university staff and current budgets based on the actual number of students at any time, including facilities for the minimum research activities considered necessary as a basis for academic teaching. The coefficients would have to vary from one field of study to another, and they would have to be reconsidered and adjusted at relatively frequent intervals.

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[1] Certain trends in the present system of government administration in this field already point in this direction ; a somewhat similar system is being applied in Sweden.

[2] In addition to junior professional staff required for direct teaching purposes.

The total number of students in each field would be determined as part of the general government plan for third-level education. A discussion of the criteria for fixing the number of students, however, is beyond the scope of this paper.

Four important items in the university budgets would not be determined by this set of standard coefficients :

Training possibilities for research workers ;
Capital expenditures on new buildings ;
Capital expenditures on research equipment ;
Research funds in addition to the minimum neccesary to ensure proper standards of academic teaching.

Recruitment policy for research must be based on long-term estimates of the demand for trained research workers in different fields of research. Since in most fields the university institutes seem to be the most appropriate place to train research workers, their training capacity must normally by far exceed their own future demand for senior staff. The standard system of minimum staff for teaching purposes will provide a considerable number of posts for junior research workers who have possibilities for further research training through their work. The expected future demand should determine the number of additional fellowships needed.

The Norwegian research councils already offer about 200 such fellowships of approximately 3 years' duration, in addition to a similar number offered by the universities. An additional fellowship programme would have to be financed through the Ministry of Education, but the councils might be asked to handle the distribution of the fellowships.

In principle, the present system of control over university construction is satisfactory. However, further work will be needed to define more clearly the standard space requirements per student in different disciplines.

The research councils have made a considerable effort to assess the need for equipment in university research institutes, and such studies, which include an examination of the possibilities for optimal utilisation of expensive equipment, are continuously followed up by the councils. Special funds for research equipment provided by the ministry are now being distributed on the advice of the research councils, and this system, which is still at an experimental stage, may prove to be the most adequate answer to the question of how to determine appropriations for this purpose.

Research policy must be based on a wide variety of criteria, requiring detailed knowledge of the various fields of research. It seems unlikely therefore that ministries can handle the detailed administration of research grants. Research grants to universities — independent of their teaching responsibilities — should be given through the research councils, as is already the case to some extent in Norway. Such grants add to the research facilities created through the standard system of funds for teaching purposes, and are evenly distributed among the different institutes according to research policy priorities and qualitative judgement of research institutes or individual research workers, etc.

Only the broad lines of the research councils' policy seem appropriate for central government control, and this control may be executed through large lump sum grants to the councils. A central advisory board on research policy may be needed for problems beyond the scope of normal research council activities.

CONCLUSION

In the author's opinion, the criteria determining Government contributions to the financing of education should be chosen with a view to promoting the general aims of educational policy. Financial regulations alone are hardly sufficient to ensure a development of the educational system in line with Government policy, and it is probable that other instruments of control will also have to be applied. It appears, however, that appropriate forms of financial aid may contribute substantially to the proper implementation of established plans and policy directions in the field of education.

Existing forms of financial aid are often the expression of a state, accountancy-minded way of looking at educational policy. Only full acceptance of education as a dynamic, constantly changing part of government policy can provide a basis for the development of a flexible and constructive control system, which should form an integral part of the process of planning for educational expansion. The specific national system described in this paper does not always meet such requirements. The examples of alternative forms of financing should be regarded as only first approximations to the solutions needed for the future.

Chapter 10

CONTROL OVER EDUCATIONAL EXPENDITURE IN THE UNITED KINGDOM

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Introduction

It may be postulated that any rational system of financial controls will operate through some or all of the following techniques :

i) the submission of estimates, whether on a simple annual basis or for a number of years, in a prescribed form which identifies main blocks of expenditure, e.g. salaries, maintenance, capital provision, equipment ;
ii) the scrutiny of estimates in the light of known facts and accepted standards of cost, with a separate assessment of the cost of proposed developments ;
iii) approval of the estimates by main subheads after necessary amendments ;
iv) continuing analysis of expenditures by sample checks in order to devise and maintain yardsticks of cost ;
v) rendering returns of actual expenditure for the approved period ;
vi) inspection and audit of accounts.

It is suggested that such a basic pattern is fundamental to good management and is reasonable, whether the cost is met partly or wholly by grants or subvention from another authority. The question of grants, e.g. from the central government to a local authority or a private agency, is a separate matter which may underline the need for good financial management but does not create it.

Good internal management should be distinguished from control by an external body, the latter operating by the external body's participation in the function of management. The existing system of public expenditure on education in England and Wales[1] is examined in the light of this brief analysis.

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[1] Education in the United Kingdom (except for universities) is administered separately for England and Wales (Department of Education and Science), Scotland (Scottish Education Department) and Northern Ireland (Ministry of Education). For the sake of simplicity, this paper deals only with England and Wales (except for universities), though the system of financial control in Scotland differs only in detail.

The expenditure[1] falls into three main groups, shown in the summary table for the financial year 1962-63 :

	£ MILLION STERLING	PERCENTAGE
Universities	119.4	10.8
Department of Education and Science	54.8	4.9
Local authorities	931.5	84.3
	1,105.7	100.0

UNIVERSITIES

About 70 per cent of the total income (apart from capital grants) of universities, is received in the form of continuing state grants, about 10 per cent from tuition and other fees paid by students (in a large number of cases with help from public funds), and the remainder from endowments and private sources and from research grants paid by the State. The greater part of the capital required for developing the universities is also found from government sources.

The arrangements for settling and paying the main State grants do not follow the usual pattern of government finance ; they are founded on the fundamental importance attached to the freedom of the universities, the general nature and significance of which was described in Chapter XVI of the Robbins Report, which has been accepted by the government.

The key agency in these arrangements is the University Grants Committee, whose functions are :

> « To inquire into the financial needs of university education in Great Britain ; to advise the government as to the application of any grants made by Parliament towards meeting them ; to collect, examine and make available information relating to university education throughout the United Kingdom, and to assist, in consultation with the universities and other bodies concerned, the preparation and execution of such plans for the development of the universities as may from time to time be required in order to ensure that they are fully adequate to national needs. »

The operation of the system is described in detail in Appendix IV of the Robbins Report, pages 5 - 13. In brief, it is the task of the Committee to advise the Department of Education and Science on the total grants required to run and develop the universities, and then to allocate between the universities the total sums which the government makes available. The Committee's recommendations concerning allocations are, by convention, regarded as binding.

The Exchequer grants fall into two main categories — non-recurrent (for capital development) and recurrent.

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[1] Though the provision of meals and milk in schools is the responsibility of the local education authorities and the cost is reimbursed 100 per cent by the Department of Education and Science, it is regarded as « welfare » and not as « educational » expenditure

For non-recurrent expenditure the University Grants Committee, after assessing the needs of the universities, submits proposals to the Department for a building programme over one or a series of years, taking into account any general objectives for expansion of student numbers which the government may have adopted. The government then announces the overall programme which it is prepared to sanction, having regard to other claims for capital investment and the prospective state of the economy. It is the task of the Committee, and not of the Department, to decide how the funds made available should be distributed, what building projects should be approved, and to give guidance on methods of planning or building. The Committee's assistance to the universities, aimed at inducing them to obtain value for money, is increasing rapidly, and with the Department's encouragement is likely to increase still more. It is important to note that, in principle, such matters are the Committee's concern, although it is in close liaison with the Department and other government agencies, and its cost limits system is subject to government approval.

Recurrent grants are fixed at five-yearly intervals on the basis of proposals made by the individual universities. Detailed estimates are submitted by each university for each of the five years under consideration, and in the light of these and visits to the universities by members of the Grants Committee and their staff, the Committee presents its recommendations to the Department on the financial needs of the universities as a whole. These visits are an essential part of the Committee's work ; they enable Committee members to inform the university authorities of essential national needs and to obtain the necessary detailed information about the universities as background to their discussions with the Department on the total sum to be made available for university development. The recommendations are considered by the government, which announces its decisions to Parliament. The Committee then devides the total sum made available among the universities. The quinquennial settlement thus arrived at may, on the proposal of the Committee and with the approval of the Government, be revised for upward price changes and changes in the salaries of academic staff, which are on scales approved by the government. « Earmarked » recurrent grants for special development may also occasionally be made, but in principle the recurrent Exchequer Grant, once paid, is entirely at the university's disposal.

Although the issues made on the recommendation of the University Grants Committee are not subject to the normal detailed Parliamentary audit, and universities have a considerable measure of discretion in applying them, controls are not absent from the system. They are exerted primarily by the overall settlements for both current and capital expenditure which have been described ; in addition, the University Grants Committee will sanction capital payments only for buildings designed within its cost limits and which it has approved in the context of its overall programme, and it also maintains norms for the equipment and furnishing of buildings ; on the recurrent side the main items of expenditure — salaries and overheads — are governed by approved scales and staff ratios, and cost indices. In view of the rapidly growing expenditure on universities, the apparatus of the Committee is being enlarged and strengthened.

DIRECT EDUCATIONAL EXPENDITURE BY THE DEPARTMENT

Educational administration (other than universities) is mainly the responsibility of locally elected authorities (which are also responsible for other services), but there are a number of functions carried out by the Department. The expenditures involved fall under one or other of the following heads.

Assistance to « voluntary » institutions and organisations

Most public education is provided by public authorities in publicly owned institutions, but a substantial proportion is not. A number of primary and secondary schools (e.g. most of the famous and oddly named « Public » schools, such as Eton, Harrow and Winchester) are completely independent and receive no assistance whatever from public funds, but there are about 9,000 primary and 900 secondary schools in England and Wales which, though owned by non-public (« voluntary ») organisations, particularly the Church of England and the Roman Catholic Church, are regarded as part of the public system and of which all the current or most of the capital expenditure is met from public funds. Other schools are partly in and partly out of this system and receive some assistance with current costs. About one-third of the 150 teacher training colleges are provided by voluntary bodies (again, mainly the Churches) and the same is true of a large range of clubs for young people, adult education centres, sports and recreational organisations, many of which are in receipt of some grants.

Maintenance of national institutions

Particularly in the field of technical education there are a number of institutions giving advanced, and often highly specialised, courses which are more conveniently provided by the central government than by the local authorities which cover a relatively small area. Examples are the Colleges of Advanced Technology, soon to become universities ; the College of Aeronautics, the Royal College of Art and the Colleges for Agricultural Engineering, Food Technology, Rubber Technology, etc.

Certain centralised functions

There are some functions which can be carried out only, or more appropriately, by the central department — grants to postgraduate university students, sponsoring and financing educational research, assistance to national bodies for general services of value to education, the payment of international subscriptions, e.g. to UNESCO.

There is, therefore, a complicated and varied collection of institutions and organisations which receive financial assistance from the

Department. The form in which the assistance is given is equally varied, and can be any of the following :

- *a)* a *percentage* grant, in which the percentage of expenditure met by grant may be unchanging (even fixed by Parliament as in the case of building work at voluntary primary and secondary schools) or settled *ad hoc* according to the needs of the particular case ;
- *b)* a *capitation* grant, in which a fixed payment is made for each student, as in the case of some independent secondary schools ;
- *c)* a *deficiency* grant, by which the Department meets the balance of approved expenditure after account has been taken of fees, investment income and other resources ;
- *d)* a *fixed* grant, by which the Department agrees to pay a fixed annual sum to an institution or body but undertakes no further commitment. This is usually in acknowledgment of general services rendered to education ;
- *e)* a *negotiated ad hoc* payment, as for research contracts or to meet some emergency.

It may well be asked why there is such lack of uniformity in the grants which the Department makes and whether some rationalisation would not conduce to economy and efficiency. The diversity lies in history, in the fact that the different grants have grown up haphazardly during half a century, just as the grant receiving institutions themselves have envolved with great variety over the years. The principal explanation undoubtedly lies in the voluntary element which plays so large and so rich a part in British life. Schools and other institutions and organisations were founded by voluntary effort and have proved their worth ; then they found their obligations outstripping their resources and turned to the State for help. These and other situations have been met over the years by *ad hoc* measures without any consistent pattern, and though some greater uniformity could undoubtedly be achieved and might contribute to ease of administration, there is no inclination in educational or political circles to make any drastic change.

With such a wide range in the pattern of payments, there can be no uniformity in the degree of control which is exercised. A fixed grant or contract price is self-contained, it is arrived at after examination of the facts, including the other resources available to the recipient, and is an agreed figure. Subject to evidence that the grant is, in fact, being used for the purposes for which it is given, no further control is neccesary. The same is true of a capitation grant, which is fixed or varied in the light of the institution's commitments and resources at the time in question, involving such examination of accounts and formal estimates as may be regarded as necessary ; subsequently, it is merely a question of checking that the number of payments made matches the number of students in attendance.

With either a percentage grant or a deficiency grant the control process conforms more nearly to normal, for in either case there is the obligation to ensure that the net expenditure figures on which the grant is paid are accurate and reasonable. In such cases, therefore :

i) estimates are obtained in standard form, examined and, after any necessary adjustment, approved in major sections ;

ii) actual expenditure figures are required, again in a prescribed form ;

iii) *ad hoc* investigations into costs are carried on from time to time ;

iv) accounts are open to examination by government auditors.

Stages *i)* and *ii)* are normally the responsibility of the administrative Branch concerned with the particular educational sector to which the institution belongs, e.g. Schools, Teacher Training, Technical Education. Scrutinising the estimates is a matter partly of gauging the accuracy of the costing in the light of known yardsticks, but more often of deciding the justification or admissibility of a new educational development which has been proposed by the institution or organisation and provisionally incorporated in the estimates. It is for the administrative branch to consider whether there is a sufficiently good case for accepting such additional developments, of which part or all of the cost would fall on public funds, and then to get such financial approvals within the Department as may be necessary. This scrutiny of the estimates is often a time-consuming operation, but it is an essential part of the control operation involving judgments on educational merits and on priorities.

To assist the administrators the Department maintains a Cost Investigation Unit, staffed by professional accountants, whose purpose is to help all those concerned with running educational institutions to achieve the maximum economy and efficiency compatible with the standards required and with varying circumstances. In particular, it assists with making the most effective use of costs data obtained from educational establishments through standardised annual returns and devises techniques for interpreting the resulting figures.

The most important function of the Unit is to instil a sense of cost consciousness amongst persons directly engaged in the administration of educational establishments and to help them to master the techniques of financial control. The general policy governing the administration of the establishments falls outside the Unit's province ; it is, however, concerned with concentrating attention on securing value for money, taking into account the local conditions.

It would obviously be neither practical nor desirable to exercise continuous detailed control, which would in any case conflict with the aim of increasing cost consciousness among those responsible for management in the field. In pursuit of this aim several methods have been adopted :

a) the dissemination of comparative information derived from standard forms of accounts from establishments performing reasonably similar functions ;

b) the scrutiny of these costing statements to determine acceptable levels of costs and to single out excessive variations ;

c) visits to individual establishments that appear typical as well as those where it appears that there is scope for improved management. The visits enable the reasons for apparently high or low costs to be evaluated and serve as a useful means of testing the application of new ideas ;

d) the organisation of conferences for those directly concerned with the administration of establishments.

Whilst costing statistics themselves do not necessarily provide proof of efficient or extravagant management, they help to establish reasonable standards of expenditure under particular headings, and act as a signpost to elements needing further investigation. Where there is reason to question the variation from the relevant standard, the appropriate administrative branch of the Department may take the matter up by correspondence, or a member of the Unit may investigate on the spot. In many cases it is found that local circumstances may provide good reasons for the differences ; in others it is often possible to identify a source of extravagance and to recommend means of improving the efficiency of the organisation.

The Department is itself subject to the financial control of the Treasury (the British Ministry of Finance) through which the Annual Estimates to Parliament are submitted and whose approval is needed before any new service or substantially increased expenditure can be undertaken.

Finally, there is the role of the Exchequer and Audit Department, under the control of the Comptroller and Auditor General, who is an independent officier responsible directly to Parliament and whose main function is to ensure that government money has been spent on the purposes for which it was intended, without extravagance or waste, and under proper controls. The day-to-day work of checking departmental expenditure is done by Exchequer and Audit staff stationed permanently with the Department, engaged on a running audit of expenditure and discussing as necessary with the finance officers of the Department any doubts or queries which may arise during the course of the survey.

Government expenditure nowadays is so vast and so varied that the auditors have come to rely more and more on test checks and special studies, the results of which are incorporated each year in the Comptroller and Auditor General's Reports to Parliament, published annually and examined by the special Public Accounts Committee of the House of Commons. The Senior Administrative Officer of the Department may be summoned before the Public Accounts Committee for questioning about the Comptroller and Auditor General's Report ; the proceedings and the ensuing report from the Committee to the House of Commons will also be published.

LOCAL AUTHORITY EXPENDITURE

As will be seen from the table at the beginning of this paper 84.3 per cent of educational expenditure is incurred by the 146 local education authorities. They maintain some 30,000 primary and secondary schools, 700 technical colleges, and over 100 teacher training colleges, and provide a wide range of educational services for children at school, for young people and for adults. They employ and pay teachers for the wide range of establishments as well as the doctors, dentists, nurses, architects, administrators and other specialists needed to run the services.

Until 1959 almost all these expenditures were assisted by the central government through grants which, after making some allowance for the different level of resources available to the individual authorities and for their differing commitments, met a fixed percentage of all expenditures. This percentage basis, which was introduced in 1918, has been valuable in encouraging authorities to develop the educational services, and the system was flexible in that it was possible to encourage progress in particular sectors by paying a preferential grant, as was done from 1952-1959 for advanced technical education. But the percentage system was frequently criticised ; as early as 1921 it was assailed as a « money-spending device » and as reducing the central government to a position of impotence « in either controlling expenditure, or affecting economies, once the policy had been determined. » Finally, it was criticised in 1958 « as an indiscriminating incentive to further expenditure » and also as carrying with it « an aggravating amount of central checking and control of detail. »

The government therefore decided that a substantially larger part of the grant aid from the centre to local authorities should be in the form of general assistance and not be tied to specific services such as education or expressed as a percentage of expenditure on those services. By Act of Parliament the change was introduced from the financial year 1959-60 whereby a number of specific (mainly percentage) grants were replaced by a general grant, the amount of which was to be fixed in advance for a short period of years, though not necessarily at the same level for each year. The specific grants abolished included those for certain health services, child care, fire, town planning, but by far the largest and most important was that for education, amounting to 85 per cent of the total. The total grant was to be distributed among the major local authorities, i.e., all counties and county boroughs (who happen also to be the local education authorities), *not* according to expenditure but by reference to certain objective factors (population, school population, young children, old people, decline in population, sparsity of population, etc.).

Since April 1959 this system of general grant has been used as the method for giving central government assistance to the local authorities and there has been no grant relative to, or even identified with, educational expenditure. The fact remains that the educational element is the major part of the total field covered by the grant and that the number of pupils in school is a very important factor in determining its distribution.

Hitherto the grant has been fixed for periods of two years, i.e., 1959-60 and 1960-61 ; 1961-62 and 1962-63 ; 1963-64 and 1964-65. Negotiations will soon commence on what the grant should be for the period April 1965 - March 1967. The procedure adopted is as follows :

a) Each local education authority submits statements under a number of specified heads showing the latest available figures of actual expenditure on educational services, and its estimates of likely expenditure under these heads for the next two years, i.e., the next grant period.

b) These estimates are scrutinised by the Department in the light of known facts about the school population, the available supply of teachers, building programmes and likely developments in the different educational sectors, the main purpose being to test the estimates for realism. This is particularly necessary in a situation where teachers and building resources are scarce ; the sum of 146 separate local education authority estimates is apt to be inflated. Though there is no attempt to impose any particular pattern of development, it is also necessary to ensure that the total expenditure envisaged, though inevitably rising, is not on an unrealistically steep curve, given the limited national resources.

c) Discussions are held between the Department and representatives of the local authorities to reach agreement if possible on any amendments to the total estimates figures, which are then submitted with the concurrence of the Treasury to the Ministry responsible for relations with Local Government and added to similar estimates for the other services in the ambit of the general grant.

d) Discussions are held with the representatives of the local authorities on the amount of the total expenditure which shall be covered by the general grant, though the final decision rests, of course, with the government, which submits a White Paper and Order to Parliament for ratification. The proportion of expenditure met by grant for the relevant services is about 56 per cent ; the operation of a « rate deficiency grant » to help the poorer areas brings the overall percentage up to 62 per cent.

e) The total grant is then divided among the authorities in accordance with the agreed objective factors. It will be noted that the grants payments are in respect of all the relevant services and that it is not possible to identify any of it as for educational purposes or to say, therefore, what share of the expenditure of the local education authorities as a whole, still less of any individual authoritiy, is met by the State.

f) The amount of the grant is fixed in relation to the levels of remuneration and prices current at the time ; it can be supplemented during the grant period should there be unforeseen increases which could not reasonably be carried in full by the local authorities.

It is to be emphasised that this system does not, and is not intended to, involve government control of local expenditure. The estimates as accepted by the Departments are used as the basis for determining the government's contribution towards that expenditure and the authority is free to spend more or less on its educational services as it sees fit, any difference accruing to, or being found from, the authority's separate local revenues, mainly taxes on occupied premises, known commonly as « rates ». In fact, however, the differences are relatively small ; in 1960-61 educational expenditure was £5.65 million less than estimated, in 1961-62 it was £4.95 million more, and in 1962-63 some £24 million more.

Control of educational expenditure therefore rests primarily with the local authority itself ; it was, indeed, the government's objective in making the change over to general grant to encourage local responsibility and control. The elected council of each authority has its own machinery and qualified officers to enable it to follow the conventional procedures indicated above ; estimates are prepared by the education staff and examined by the Education Committee ; they are scrutinised by the authority's financial officers, submitted to the Finance Committee and finally approved by the authority itself, i.e. the elected County or Town Council. Final accounts are produced and are examined by an independent « District Auditor » with regard to the legality and reasonableness of the expenditure, as well as accuracy and the avoidance of fraud. He is not an officer of the local authority but a member of an autonomous body of people attached to, though in practice independent of, the central government department which has particular responsibility for relations with local government. The basic principles of control are, therefore, observed ; indeed, when the new system was introduced in 1959 fears were expressed that local control might be unduly severe and restrictive.

Local control over expenditure does not mean that the Department is without power or influence in such matters ; its controls, however, are mainly with a view to the maintenance of educational standards and not primarily financial. One exception to this is school building : the Department not only prescribes minimum conditions which a school must satisfy and decides which schools may be provided, enlarged or substantially improved, but also fixes a maximum cost yardstick which must be observed. This, however, is exceptional and springs not from the desire to limit expenditure as such, but to get the maximum return from the limited amount of capital investment in educational building which can be permitted. In any case, there is room for manœuvre, experiment and variety between the « floor » of the regulations and the « ceiling » of the cost limits.

One other direct control is the fixing of the number of full-time teachers that each authority may employ in primary and secondary schools ; this, again, is not for financial purposes but for greater fairness in the distribution of the limited number of teachers available, and is devised in the interests of the less attractive areas of the country.

A major element in local education expenditure is teachers' salaries, over which the individual local authority has little control as they are fixed nationally in negotiations between representatives of the teachers and of the authorities and, if approved by the Secretary of State, are made obligatory on all authorities. (The arrangements for negotiating teachers' salaries are at present under review to see whether the Department should play a larger role than the simple acceptance or rejection allowed at present).

Generally speaking, the function of the Department is not so much to control local authority expenditure as to secure adequate educational provision and to bring to the attention of the providing authorities needs that should be met. Its work is expansionist rather than restrictionist. At the same time, it has to bear in mind both the need to consider the general economy and the many other demands upon resources and to ensure that, so far as possible, the education service is not excessive and extravagant and that there is the maximum return for money spent. An important element in its work is, therefore, advice to authorities on economical provision, through such agencies as the Cost Investigation Unit already described and the Development Group in the Architects and Building Branch.

CONCLUSION

It will be seen that in the United Kingdom there is no central control of educational expenditure but a very diffuse and varied pattern of arrangements which is dictated partly by constitutional powers, partly by historical growth and partly by currently accepted doctrines. More than three-quarters of the educational expenditure is incurred by the local authorities, which are democratically elected bodies with their own means of financial control and which are left free to make their own decisions within the general framework of national educational policy without government control over detail. It is true that the particular system of general grant which allows this freedom is of recent introduction and was strongly resisted by many educationalists and the subject of political controversy. Many critics feared that educational progress would be obstructed by the general grant system. In fact, before the last election, the present government indicated their intention to alter the system. It remains to be seen whether the implementation of this undertaking involves a return to a percentage grant system similar to that which prevailed before 1959 and to arrangements for more detailed approvals by the central government of proposed local educational expenditure, or whether some new pattern of education grant emerges.

The arrangements for financing the universities, as decribed above, is outside any normal pattern of financial control, and whatever modification may be introduced as regards accountability to Parliament for money spent, is not likely to be substantially changed.

We are left, therefore, with the Department's own expenditure, a mere 4.9 per cent of the total, to which central control on the normal pattern could be regarded as appropriate. Even here departmental action is to some extent bound by Parliamentary decisions (e.g. that assistance to the providers of « voluntary » schools in England and Wales should be a grant of 75 per cent with an obligation to lend the balance if the providers so request) but there remains a field in which the techniques of control by estimates, cost analysis and audit can be, and are, exercised.

The great variety in the type of payment made may seem unnecessarily wide and it must be admitted that it has no rational justification. Given, however, the force of tradition and the resistance of the grant-receiving institutions themselves to change, it is unlikely that any large-scale changes will be made within the foreseeable future.

Chapter 11

THE FINANCING OF EDUCATION IN FRANCE, GREAT BRITAIN, NORWAY AND GERMANY

by
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AN ANALYSIS OF SYSTEMS OF FINANCING EDUCATION

An analysis of a system of financing education comes down to asking : « Who pays what, how much, why and how ? », that is to say, defining the nature and amount of expenditure involved, the origin of funds, the identity of the person responsible for the expenditure and the procedure he adopts to define it. The aim of this preliminary synthesis is to compare the principles and methods of financing education in European countries which have different political and social structures.

The Origin of Funds

Contributions from the private sector

Three types of essentially political questions condition the origin of funds in each country :

— education, a public or private service ?
— education, a service of national or local interest ?
— who pays the public services ?

The part played by the private sector in financing educational expenditure is, of course, characterised by political and social opinions. Distinctions should, however, be made between two different problems :

— the proportion of educational expenditure received by private educational establishments, before and after transfers from public authorities ;
— the proportion of educational expenditure borne by the private sector in general, whether directly or through special-

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* This comparative study is based in part on the reports presented at this conference by Messrs. Embling, Eide and Garcia and on a background report prepared by Alfred Heim of the Science Council, Cologne, Germany.

ised institutions : that is to say, the cost of education to the family (school books and materials, maintaining the pupil, private lessons, etc.), to associations (cultural or sports associations) or to firms (vocational training).

Sufficient statistical material is not available on these points, but it appears that contributions from the private sector in the wide sense of the term are decidedly lower in Europe than in the United States, which may possibly explain certain deficiences in financing.

Contributions from the central government and local authorities

The distribution of funds provided by the various levels of public authorities reflects the juridical structure of the State, and education may even be considered as a particularly significant criterion of whether decisions for the communal good are made on a local or national level.

Educational organisation systems are very varied. The most highly decentralised of the countries studied is certainly Great Britain, where local authorities bear almost the entire responsibility for primary and secondary education, whilst universities enjoy a large measure of independence. France, on the other hand, has a strongly centralised system, with objectives and standards fixed on a national scale.

The distribution of authority is not necessarily in relation to that of costs ; the central government has various non-financial methods of making its authority felt. Neither is the distribution of costs totally reflected in expenditure (e.g. the redistribution of funds which occurs for various reasons should be taken into account, such as those used to reduce disparities between local authorities, an especially acute problem in Norway due to geographical factors).

The differences between the systems of financing education are very marked. In France, the State bears more than 90 per cent of educational expenditure before transfer, whereas in Great Britain it is almost the contrary if expenditure after transfer is examined, but it must be taken into account that an overall grant which covers about 60 per cent of their total expenditure is given to local authorities. In Norway the distribution of costs before transfer is about equal ; after transfer the government spends about a quarter of the total communal expenditure on education. In Germany the Länder provide and spend about two thirds of the funds for education, the contribution of the Federal Government being almost negligible.

Financial Resources

The economic origin. These resources naturally come :

— either directly from the system for financing education : proportion of fees and expenses paid directly by families, various legacies or gifts, direct expenditure by firms (vocational training), taxes and staff salaries, funds allotted for certain allowances (for example, in France the Barangé grant is financed by a turnover tax and on the meat traffic) ;

— or indirectly from the fiscal system being applied by the authorities responsible for educational expenditure. When the basis of fiscal resources differs very much between authorities, the economist may need to look to the appropriate hierarchical level. In the case of France, for example, it is certain that the fairly static character of local funds makes it useless to look for support for intellectual expansion in the communes.

By whom are the funds paid ? From the democratic point of view it may be asked who pays for public services and who benefits from them ? For example, there was some opposition to the plan to give grants to students for higher education when it was realised that these grants would consist of a transfer from the average (or poor) taxpayer to classes which are privileged by birth or in their future professional status. Educational expenditure involves large transfers of funds which should be taken into account in an overall social policy.

THE PROCEDURE OF FINANCING

The practical machinery of decision is of primary interest to specialists in financing education : who makes decisions ? following what procedure ?

Who makes the decisions ?

In principle : the authority which assumes the expenditure also bears the responsibility for educational policy. For example, the very great liberty which the local authorities appear to have in Great Britain corresponds to their financial responsibility. The new system of outright grants which was adopted in 1959 increases their independence. However, even in countries which have a decentralised administrative structure, the freedom of initiative of the « payer » may be very considerably limited by directives laid down by the central authority. Educational standards, sometimes teachers' salaries, and average costs are fixed and controlled by the Ministry of Education, (Great Britain and Norway), with a dual aim : to maintain minimum conditions and to ensure a fair distribution of sparse teaching resources.

In fact : educational expenditure does not follow legal definitions very rigorously. The deciders of educational expenditure can be found among two groups : those who state needs and those who admit them to be justified.

Advisory bodies play a very important part in this field, whether they be permanent bodies integrated into the institutional hierarchy (e.g. the University Grants Committee in Great Britain ; the *Commission d'Equipement scolaire au Commissariat du Plan français*), or temporary working parties (e.g. the Robbins Committee in Great Britain, the *Commission des Dix-huit* in France). These advisory organisations are particularly effective when they are asked to propose middle- and long-term targets to the government, translating the general trends in educational policy into figures.

These proposals must be specifically recognised as targets of expenditure. At this stage, those responsible for general economic and financial policies come into the picture, under the authority of the central government (or in agreement between the governments of Länder). When a planning organisation exists, it examines the middle-term educational policy in relation to the physical targets of the whole nation. In a non-planned economy, the Minister of Finance decides which needs are to be met, taking into account the purely financial problems which are sometimes limited to the short term, and the field of activities of the national budget. When both a plan and a budget exist, delicate problems of financial (and even political) adjustments arise, which it would be interesting to discuss. In an economy which is not very centralised, the government has another way of making good its educational policy — by law.

To sum up, it may be concluded that, in spite of the variety of institutional structures, the real responsibility for educational expenditure lies in the hands of the government. How does it act in consequence ?

How are decisions made ?

Fixing objectives. The general principles of education of the country, as well as its administrative and financial systems, are decided by the highest authorities. The same is not true, however, where middle- and long-term objectives are concerned, for all sorts of planning and advisory organisations play an important part in establishing requirement programmes, even if they do not take the final decision on expenditure.

It would be interesting to examine in detail how the proposals of the University Grants Committee are worked out, and how the 1960 Norwegian ten-year plan for universities was drawn up, or the German long-term programme. In France, the Committee for Educational Equipment of the *Commissariat du Plan* assesses the capital requirements for foreseeable increases in the school-age population. The government adopts the figures thus obtained as expenditure targets for a period of four years.

Decisions on expenditure. However perfect a plan may be, it is no more than a programme of action. Decisions on expenditure must be made by the competent authorities. How can educational targets be attained, whether planned or not ? The financing system is an essential means.

The countries examined have adopted very varied methods :

- total independence of the authority responsible, at least at the financial level (e.g. the « public » schools such as Eton and Harrow) ;
- subsidised liberty : either general subsidies not necessarily set apart for educational expenditure, (e.g. British universities) or subsidies which are carefully adjusted to the nature of the expenditure (compulsory education in Norway, sub-

sidies to private education in France, or to cover deficits, etc.) ;

- the establishing of rules covering educational standards, teachers' pay, cost of equipment ;
- the taking over by the State of all expenditure after preliminary examination and with subsequent detailed control of expenditure (e.g. higher education and the greater part of secondary education in France).

It might be advisable to glance at these methods of financial incentive

Standards. These are sometimes targets to be reached over several years (e.g. Germany) or real minimum imperatives (Great Britain and Norway), or even ceilings on expenditure (almost everywhere for buildings).

Teachers' salaries are standardised nationally in most countries. Governments also try to ensure that the maximum number of pupils per teacher is not exceeded, although teaching requirements may also require that a minimum be imposed (e.g. Norway).

Other standards frequently found are those for building costs.

Methods and rates of subsidies. The general grant, which is not allocated for specific, or even educational expenditure, represents a desire to respect self-government (British universities and local authorities).

The automatic lump-sum grant, covering a percentage of expenses, represents a desire to share not only the financial costs but also the responsibility of making decisions, as it implies careful examination of budgets. The percentage expenditure system is used in Norway for staff, pupils' transport and maintenance, and in France for running nationalised establishments, for building and for pupils' transport.

The fixed-sum grant per pupil system is used in Norway for equipment. In France it is used to calculate various grants for operating state-controlled establishments and for educational material.

Selective grants are adapted to suit each case and allow greater flexibility in government policy and better adjustment to targets. The fact that these grants are difficult to apply limits them to a certain type of expenditure : building in Norway (which is not often subsidised), universities, when there are only a few of them (Norway), all types of associations which carry out educational activities (everywhere), specialised research programmes, etc. The scholarship system in France adjusts grants to particular situations.

The acceptance of full responsibility by the State should imply a perfect equilibrium between financial decisions and educational objectives. This is not always so in practice.

Loans. These are sometimes given in place of, or at the same time as, grants. In all countries banks make loans to communes at a low rate of interest for building.

The periodicity of decisions. This varies according to the country and type of education. In Great Britain, the five year system of planning for universities exists alongside a two-year — and soon a three-year — system for local authorities. Norway has a ten-year plan for universities ; it is adjusted by short-term decisions with no established periodicity. In France, the four-year plan (five years for the Vth Plan) defines a building objective, but decisions regarding finance are taken yearly, even those concerning buildings. Decisions are made during the yearly budget discussions on current expenditure and on almost all new principles (changes in subsidies, rise in university costs, etc.). In Germany the Länder governments have a very detailed ten-year plan. It remains to be seen whether it can be applied integrally or whether other financial decisions will be necessary, for example, in the budget. It would be interesting to examine the advantages and disadvantages of these different cycles of financial decisions.

Control. If targets and standards are to be respected the competent authorities should exercise a certain degree of control. This question requires examination, as the solution adopted affects the efficiency of the system. In France there are several controls[1] : primary (on the agreement of expenditure and then at the payment stage) and secondary (juridical control) : this is essentially a check on the correct use of funds. Efficiency control (an evaluation of administration based on a comparison of prices, costs, etc.) is as yet only rudimentary. It appears that in Great Britain, on the contrary, efficiency control is fairly well developed and is accompanied at the same time by an advisory service, which is very useful. Control of correct use of funds also exists. One of the essential tasks of control is to appraise results in order to enable possible modifications of targets or of methods employed. This is the case in countries with long-term programmes which are frequently revised as a result of educational demands and a rise in prices.

THE CRITERIA OF FINANCING

This part of the study is essentially problematic owing to the lack of guide lines to government action, and aims at noting a few questions for future investigation based on the French example.

Global choices

General. In each country the share of total national expenditure allocated to education, and the share of the main sectors in educational expenditure are closely linked : the choice in favour of one sector of education (e.g. vigorous development of technical education) implies that costs are accepted which will influence the total expenditure. The two problems are also linked to the historical background. It can be assumed that all European countries developed primary education during the XIXth century, and that secondary and higher education has been in existence for an indefinite time. All, or almost all, of them have had to increase their establishments considerably in the past ten years or so, owing to the growth in population and in the number of pupils in the secondary and higher levels. Some countries have emphasized this tendency by raising the school leaving age. This situation simplifies the problem of choice, which is now restricted to marginal decisions. Many countries seem satisfied to note requirements and satisfy them as and when they are able, according to national means. Long-term educational targets are not comparable with those of the health services, town planning and motorway construction, or in general with the whole of the national expenditure within an estimated balance of requirements and resources[1].

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[1] It should be noted that control follows the approval of expenditure and makes it possible to verify that the funds were spent on the purpose for which they were allocated. One cannot say that control exists at the stage of budget preparation unless an examination is made, in the form of control, of the administration of an establishment.

The French example. In France the working method is more complicated. A table is drawn up showing estimates for the use of national funds during the last year of the Plan, e.g.

DISTRIBUTION OF EXPENDITURE FOR THE IVth PLAN

	GROWTH 1961-1965		PERCENTAGE OF THE INTERNAL GROSS PRODUCTION	
	IN %	PERCENTAGE OF TOTAL GROWTH	1961	1965
Economic investments	28	16	14.6	15
Social investments :				
housing	25	5	4.7	4.8
authorities' equipment	50	5	2.8	3.4
Administrative expenditure	22	5	5.6	5.4
Household consumption	23	67	70	69.2
Exterior balance	23	2	2.3	2.2
Total	24	100	100	100

Such a table allows for a series of major options on the aims of development and the type of authority which may be called on to implement them. The options relating to authorities' investments are not very indicative as the Government undertakes to finance its share, which is preponderant so far as education, health and housing are concerned. Targets relating to administrative expenditure broadly cover running expenses and are less detailed than those for investments, their final volume depending on the yearly budget discussion. It should be added that as far as authorities' investments are concerned these total figures are divided among competing demands on the basis of an analysis of requirements presented by the consultative committees.

There are, therefore, two phases in the method of choice :

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[1] This statement was based simply on the papers submitted to the conference and does not take into account any of the discussion at the meeting.

— the share of social investments in national expenditure,
— the share of education in social investments.

The first phase rests on essentially economic criteria ; the share of social investments represents the balance of gross fixed capital remaining available after the economic investments necessary to maintain or increase the growth rate of the National Product.

The second phase is more qualitative. In the absence of rigorous criteria, it is the result of a more or less subjective choice made between the demands of various sectors (housing, town planning, culture, education, social and medical equipment). When the global choices have been made, specific decisions for education are included, by adjustments, in the structure of the proposed Bill presented to parliament.

Detailed choices

A « ceiling », fixed more or less rationally, relatively simplifies choices. Whether a Plan, the yearly national budget, or the budget of a local authority, is concerned, there is in fact a level of spending which must not be overstepped, and this relieves the educational economist of most of his preoccupations about maximum expenditure. However, the best possible use must be made of available funds and to do this certain criteria must be established.

Criteria expressed :

a) Certain criteria must be applied to educational policy :
- the quality of education must be ensured ;
- some educational reform must be carried out on a more or less long-term basis : school-leaving age must be extended (Norway, France), teaching methods must be changed.

b) Others deal with broader questions :
- the lowering or levelling up of the financial burden of local authorities (Norway, France) ;
- the facilitating of some degree of control over local budgets ;
- the equalising of opportunities for children and the democratising of education ;
- the voluntary developing of areas with the help of social equipment ;
- the supplying of top-level manpower needed for development ;
- the facilitating of the linguistic and cultural unification of a country where necessary.

Combination of criteria

A financial criterion can never be compared to a mathematical constraint. A single expenditure con correspondend to several criteria and a target may be reached in several ways, through different types of expenditure. Criteria themselves may become mixed ; non-educational targets are often more imperative and may be more easily A financial option is a combination of many criteria. In fact it is a question of political criteria depending on the economic and social situation of each country.

NATURE OF EXPENDITURE

Any evaluation of a financial system should be based on facts and figures. The standardisation of international statistics for the financing of education should follow that of general educational statistics. The French paper No. 8 suggests a layout which might be a subject of discussion. It would, of course, be desirable to break down the information in order to know, for example, the cost of administrative personnel in primary education, or the capital expenditure devoted to physical training at higher levels. This would allow characteristic ratios to be established. Current statistics are inadequate for this purpose, but this work would seem to be a pre-condition for a detailed study on the comparative financing of education.

THE THEORY AND PRACTICE OF FINANCING EDUCATION IN EUROPE

In most countries the tasks of financing education are divided into two parts. Officials of the Ministry of Education do their utmost to provide maximum quaranteed estimates to ensure adequate decisions and efficient performance. But the Ministry of Finance has to consider the drain on funds. This may prevent the overall view which the breadth and interest of the financial problems of education call for.

THE TECHNICAL IMPERATIVES OF FINANCING EDUCATION

To estimate and decide on what are the most justified requirements, and then to obtain the necessary funds — these are the two sides of a financial system. An educational economist, from the theoretical point of view, should take an interest in both these problems.

Determining requirements

- A preliminary definition is required of a policy in terms of real needs. Transforming this policy into costs should not hide the fact that the most important thing is not to receive money but to dispose of the means to carry out certain well-defined aims. For example, in an economy with limited building possibilities it would be useless to have twice as much money if the only result was the same number of buildings at double the price. Requirements should be analysed according to the type of expenditure (personnel, purchase of goods and services, capital expenditure) in order to work out a balance.
- This evaluation should cover the tasks of education in relation to the nation as a whole (State, local authorities, associations, firms, families). The functions of education must be analysed ; this cannot necessarily be identified with specialised institutions. The distribution of tasks and responsibilities

between various authorities is a problem which should arise only later on.

- The policy suggested should be put to internal coherence tests : educational coherence, of course (balance of school curricula), but also physical and financial tests (for example, it is not logical to erect buildings without making provision for their corresponding function, or to finance boardings schools at the same time as school transport).
- The educational economist should also carry out external coherence tests (the existence of funds) and optimum use tests (priorities chosen as a function of maximum efficiency).

The drain on funds

The simplest formula would be for a fixed sum per pupil to be paid. This adjustment would be automatic in a market economy where each customer pays the cost price of the product he buys. It could also be the case, with all idea of profit put aside, if educational establishments levied a sort of tax for the provision of services in the form of school fees corresponding to real costs. Of course this formula conflicts with the more and more widespread idea of free education[1].

A second possibility would be to obtain an allocation of money based on receipts in vigorous expansion (revenues, consumer expenditure, etc.). This method has certain advantages in a spending sector, but equal disadvantages for the unity of the Treasury, which usually means that it is not used. Ministers of Finance do not generally like systems which cannot be revised periodically in the budget, and refuse automatic grants.

Failing automatically allocated funds, the educational economist becomes a petitioner. He has to plead his case with government authorities when fixing the overall volume of the educational policy, or with local authorities, using various methods of persuasion, whether financial or not. He thus engages in an action very far removed from the theoretical rationalisation of selection.

THE DIFFICULTIES OF A RATIONAL PLAN OF FINANCING

Technical difficulties

The technical difficulties of establishing a financial system for education should not be underestimated. It is not always possible to reply to certain questions, even elementary ones, concerning :

Expenditure targets

It is almost impossible rationally to fix education's share of national expenditure. Extrapolation of trends and comparison with more highly developed countries are methods (sometimes contestable) of estimating and not of selecting. Studies on educational yield are still in their infancy ; they should, moreover, be compared with health and town planning policies, etc.

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[1] It is true that *ex-ante* free education can be converted into *ex-post* payment by the use of repayable loans ; educational costs could be refunded through the Social Security system, etc.

It is not even possible as yet definitely to fix objectives by sector within education. Of course, indications exist showing the need to develop technical education in expanding economies, and it is well known that the expansion of the female labour force presupposes more Kindergartens. But in what proportion should this be done ? And at what cost ? All educational policy, seen from the financial angle, is based on two series of variables ; the number of people involved and the unit cost. Enrolment policy can be made to alter not only overall figures, but also distribution into age groups (education can be given up to retirement age and over), by regions, by social origins, by the type or level of education.

The policy of unit cost covers : — the diversity of services given : teaching (subdivided into many divisions), maintenance, food and accommodation, educational material, transport, cultural and sports activities, etc ; — the quality of these services which, in theory, results from the human and material means placed at pupils' disposal ; — the productivity of the teaching machine.

Thus, although it is possible to compare the cost of premises and facilities for a thousand extra pupils and that of introducing audio-visual methods for the actual school population, how can the efficacity of these actions be compared ?

Resources

The difficulty of finding rapidly developing funds. Most educational economists find themselves in a very difficult situation due to the exponential nature of expenditure in the next ten or fifteen years. Each of the basic factors in expansion is multiplied by other factors which are themselves expanding : the growth in population increases the number of children of school age ; the extension of the spontaneous demand for education raises the percentage of school children beyond the legal school leaving age (even up to adult age) ; the increasing demands for means and methods of education. This is already noticeable in the quality of services given (teachers, textbooks, audio-visual methods). The development of therapeutic education can also be envisaged (maladjusted children), or simply education better adjusted to individual needs, and therefore more costly ; — greater specialisation results in higher costs. Many services which used to be provided in the home (maintaining the child, certain forms of education) affect the monetary system as soon as they are given by a specialised establishment ; finally, there is a logic typical of social services, that of equality (which seems to be taking the place of the idea of liberty in XXth century thought). As soon as a new service is instituted for the benefit of a few, the levelling-up tendency extends it to the majority.

To satisfy such needs, resources which develop as rapidly as needs have to be found. Only revenues and consumer expenditure can provide an appropriate basis. In any case a single budgetary source is probably insufficient and it would be preferable for costs to be spread.

The difficulty of defining optimum distribution. The distribution of the financial burden should enable the necessary funds to be obtained when required, and be reasonably fair. The idea of fiscal justice has been abundantly commented upon by specialists in public finance. It should now be re-shaped in relation to the objective : financing education — that is, there should be a precise breakdown of the real beneficiaries of an educational policy (the State, local authorities, associations, firms, families) in order to divide the costs.

The resulting plan is certainly not satisfactory in the sense that it does not take into account costs which have already been met elsewhere, or the ability of the various persons concerned to contribute. If fiscal justice is interpreted too strictly, distortions, that is to say, injustices, may result. This is why all governments have created empirical systems for distributing costs among communes, families, etc. Finally, a fair system is not necessarily a profitable one. Education needs money, money spent efficiently. It is really unimportant if the necessary money does not come from the persons most concerned with education. On the purely technical level it is therefore extremely difficult to define a completely rational financial system. Up to now, no economist has been able to lay down strict criteria for optimum use, either for distributing expenditure or funds. It may be thought that the criterion of optimum use is not necessary, since, even if it existed, it would be practically impossible to put into practice for political reasons.

Political difficulties

Financial systems were not formulated with the sole aim of financing the development of education, they correspond to the basic requirements of a political society. In Europe they result more particularly from the implications of economic liberalism and the parliamentary system. Up to now only military expenditure (due to its urgency and size) has given rise to somewhat unorthodox financial techniques in the public sector.

Adjusting resources

It is difficult to increase total public resources beyond a certain level, or at least beyond a certain growth rate. This is due to the European concept of the role of the State, or that of public authorities in general. In reality much greater importance is given to the identity of the spender than to the nature of the expenditure. Even if some private consumption is completely futile, and some community requirements are dangerously under-estimated, it appears difficult to alter the structure of national expenditure. Freedom of consumption (only slightly corrected by income tax) creates a limit for the educational economist. For other obvious reasons he cannot come on to the market to offer educational services against payment. He has to confine himself to influencing the opinion of the citizen, not of the consumer, and this results in a certain weakness in the « publicity » devoted to the development of education.

Adjusting expenditure

It is also very difficult to interfere with established expenditure in order to meet new requirements. In public opinion, once something is established it remains for good, even if more justifiable needs arise. Principles of financing which were adopted when education started in a poor society should be revised when the educational policy is generalised in a society whose relative wealth is shown by increase in private expenditure. In fact this does not occur : new requirements are added to old ones and the rigidity of the system prohibits any important changes. The educational economist has very little margin for initiative, and even if he were Minister of Finance his possibilities of immediate action would hardly equal the importance of the problems to be solved. This is why the criteria of optimum use or priorities cannot be considered over a wide range of possibilities but only as fairly small marginal alterations. The theoretical plan (defining requirements and then finding funds) should be reversed : in other words « tell me how much money you are giving me and I will tell you what education I can offer you » ; this is fundamentally the attitude of those responsible for education under a public system of allocating funds. These restraints should be taken into account when attempting to make the financing of education contribute to economic development.

CONCLUSION

The analysis of national reports shows a difference in the principles of financing education which is more apparent than real. This is not surprising, as the basic problems are identical for both the requirements to be satisfied and the economic and social environment in which they occur. The greatest difference lies in the conception of the role of the State, as compared to that of local authorities, in financing education.

Some questions remain : How can the plan and the budget be linked ? What place should be given to education in total national expenditure, and what place to each sector within education ? On what funds can the foreseeable expansion in needs for education be based ?

On the methodological level, how can future analyses be carried out ? In this connection it is indispensable to make national data comparable by a closer definition of concepts. This is essential for both research workers and promoters of education.

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STUDENT FINANCING MEASURES

12
STUDENT FINANCING AND ENROLMENT IN HIGHER EDUCATION

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13
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210/211

Chapter 12

STUDENT FINANCING AND ENROLMENT IN HIGHER EDUCATION

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STUDENT AID AVAILABLE

A student may be helped by keeping the cost of education down through efficient operation, or (and) keeping the tuition charge low by direct subsidies from public or private sources to the Institutions of Higher Learning (referred to henceforth as IHL), or directly by scholarships, loans, employment or tax concessions to him or his parents.

Practices vary from country to country. In the USSR, the government makes a wage available to the vast majority of students who meet certain standards[1]. One observer puts it as follows :

> « The Soviet system, from the first to the last, gears school to society and industry, because these are said to be different aspects of the same thing... Within its own logic, therefore, it is right in creaming off the very best formative opportunities in universities and research. Universities and professional institutes charge no fees, and maintenance is also provided when necessary... »[2]

In Great Britain the government provides subsidies to students covering tuition, room and board, and even travel and needs during vacation. Once a student is accepted by an IHL, his financial worries are largely over. This help to students has made it possible to double the number of full-time students — from 50,000 before the war to 100,000 by 1959-60 — and 135,000 are anticipated for 1965. The cost of university awards in Great Britain in 1951-52 was £ 5.6 million ; in 1958-59, £ 21.6 million, and in 1962-63, £ 46 million. In 1960, the Anderson Committee estimated £ 39 million for a university population of 135,000 in 1965 — an estimate well below that of the Robbins Committee[1].

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[1] See Nicholas DeWitt, « Soviet and American Higher Education : Magnitude, Resources and Costs », *Economic Aspects of Higher Education*, (S. E. Harris ed.) OECD, 1964.

[2] E. J. King, « How Talent Hunting is Conducted Abroad in the Search for Talent », *College Admissions*, 7, 1960, p. 56.

The British scholarships available to all needy students admitted to a university are costly. An estimate of the costs of a corresponding programme in the United States with adjustments for differences in the purchasing power, per capita income, and total population, would be between $ 1 billion and $ 1.5 billion. Taking into account purchasing power, and the total number of IHL students in 1965, the outlay for scholarships in the United States in 1965 corresponding to the British outlay would be over $ 5 billion, even on the basis of British outlay in 1962-63. If comparison is made for full-time students, however, the correct figure is roughly $ 4 billion[2].

Compared to this total of $ 4 billion for scholarships required in the United States to match the British standards, the amounts available in the United States are small indeed, being relatively about 1/18th as large. The amount is most inadequate, even if allowance is made for the greater recourse to loans and employment in the United States. The British have never taken kindly to loan financing, and the effect of generous scholarship aid is to make student employment unnecessary.

The Robbins Committee anticipated large increases in student aid during the next 20 years. Against £ 46 million in 1962-63 the Committee suggested expenditures of £ 221 million for student maintenance in 1980-81, or a rise from 20 to 30 per cent of total public outlays for higher education, public contributions accounting for 90 per cent of all expenditure by IHL. (About half of the increase is associated with growth in real incomes.) If student aid were to rise to 30 per cent of all expenditures for higher education in the United States (I assume a 3 per cent rise in productivity per year as in the past and a rise in expenditures for higher education of 3 per cent a year in stable dollars), then outlays for student aid would increase to roughly $ 4,500 million as against only $ 235 million now spent by IHL, $ 600-700 million from all sources[3]. Total student aid would need to be about $ 1,500 million in the United States if compared to present British standards on the basis of relative population and per capita income, or $ 4,000 million on the basis of per capita income and relative college enrolments, or $ 4,500 million in 1980-81 on the basis of the proportion of student aid to the total outlay for higher education. High estimates for 1960-1961 show total aid in the United States to be about $ 720 million. Of this,

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[1] See especially *Higher Education Report* (Robbins Report), 1963, p. 202. *Grants to Students,* Ministry of Education (Report of the Anderson Committee), Cmd 1051, 1960 ; *Statistics of Education,* HMSO, 1961, Part II ; J. Vaizey, *The Costs of Education,* 1957, especially pp. 156-157.

[2] For the purposes of this estimate somewhat arbitrary assumptions had to be made, namely £ 1 = $ 3.5 ; per capita income in the United States is twice that in the United Kingdom ; the estimated number of students in 1965 in the United States is 5 million, and in the United Kingdom, 135 thousand.

[3] *Higher Education Report,* 1963, Cmd 2154, p. 202. My estimates for the United States.

IHL provide about $ 236 million[1], the Federal Government $ 346 million, States $ 52 million, international exchange $ 46 million, and corporations and others $ 40 million[2].

The major items, scholarships and fellowships, take about two-thirds of the total amount ; employment corresponds to $ 100 million or more, and loans, mainly from the Federal Government but also from the state governments and IHL represent a further $ 100 million. The amount derived from employment is probably larger than indicated by these figures, for employment not provided by IHL escapes attention to some extent.

Practices differ widely among IHL, however, as shown by Rexford Moon who studied the policies of ten IHL in 1960. One offered as much as 99 per cent of its aid in the form of scholarships and another only 2 per cent (an average of 27 per cent for the ten IHL). A few offered no aid in the form of loans, and one as much as 11 per cent (the average for loans was only 2.4 per cent). Scholarships and jobs combined represented 51 per cent for one IHL — this combination was not used at all by two institutions (31 per cent average for the ten)[3].

TABLE 1. APPROXIMATE EXPENDITURE ON DIRECT OFFICIAL AID TO STUDENTS IN HIGHER EDUCATION, IN FORTY-FOUR COUNTRIES IN 1960 (1959 IN SOME CASES)

COUNTRY	TOTAL AID *US $ million*	PER STUDENT IN HIGHER EDUCATION *US $*	PER HEAD OF POPULATION *US $*
USA	611.1	173	3.38
UK	98.9	329	1.89
France	20.5	82	0.45
Australia	15.4	179	1.49
Germany (FR)	13.1	46	0.24
Netherlands	12.7	174	1.11
Sweden	11.2	323	1.49
Japan	11.1	16	0.12
India	10.0	11	0.02
Canada	9.5	81	0.53
Total of above	813.5	129	0.90
Twenty-eight less-developed countries	14.1	18	0.03
Six developed countries	13.4	69	0.45
Overall total	841.0	115	0.62
Of which :			
Developed countries	816.9	146	1.62
Less-developed countries	24.1	14	0.03
Total excluding USA and UK	131.0	38	0.12
Developed countries excluding USA and UK	106.9	62	0.39

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[1] R. G. Moon, Jr., *Student Financial Aid in the United States*, 1961, pp. 42-43.

[2] The differences between Moon's estimate of total United States aid and those made by Frank Bowles for UNESCO are probably based on different definitions and estimates of the extent of federal aid.

[3] R. G. Moon, *College and University*, Summer 1962, p. 448.

In contrast to the British and Continental practice generally, government aid in the United States covers roughly only 60 per cent of total student aid, dependence on loans and employment being much greater.

The Bowles study also reveals some interesting facets of this subject.

According to Table 1, governments in the United Kingdom, Sweden, Australia, and the Netherlands provided surprisingly more public aid per student in higher education than did that of the United States, and this despite the large differences in per capita income(if allowance is made for income differentials, the same conclusion holds for France). Non-government aid is large, however, in the United States.

When public aid is calculated on the basis of costs per head of the population rather than aid per student, the figure for the United States, as compared to the other countries, is relatively higher. Here the large enrolment in IHL in the United States greatly raises the relative cost per member of the population[1].

TABLE 2

COUNTRY	AID PER STUDENT IN HIGHER EDUCATION 1	AID PER HEAD OF POPULATION 2	PER CAPITA GNP 3	RELATION OF 1 : 3 4	RELATION OF 2 : 3 5
	US $			*Per cent*	
USA	173	3.38	2,787	6.2	0.121
UK	329	1.89	1,493	22.0	0.127
France	82	0.45	1,276	6.4	0.035
Germany (FR)	46	0.24	1,263	3.6	0.019
Netherlands	174	1.11	978	17.8	0.114
Sweden	323	1.49	1,631	19.8	0.091

Source : Columns 1 and 2, Bowles, *op. cit.* ; 3, *US Statistical Abstract*, 1963 : 4 and 5, my calculations.

This table shows the large amount of student aid in the United Kingdom, Sweden, and the Netherlands when calculated on the basis of aid per student in higher education in comparison to GNP per capita, and the relatively favourable results for the United States, the United Kingdom, and the Netherlands when a comparison is made between GNP per capita and aid per head of population. Here again the large enrolment in higher education in the United States improves the record over the earlier comparison.

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[1] See especially Frank Bowles, *Access to Higher Education*, Vol. I, p. 186 ; R. G. Moon, *Student Financial Aid in the United States*, 1962 ; John Morse, *The Federal Government and Education*, House Document No. 159, 1963, especially p. 33 ; E. D. West, *Financial Aid to the Undergraduate, Issues and Implications*, American Council on Education, 1963, especially chapter 3.

STUDENT AID THROUGH REDUCTION OF COSTS

By keeping costs down, IHL can make it easier for students to obtain higher education. The low costs may be achieved in various ways : efficient operation, lowering of the quality of the education provided, outright subsidies to IHL, provision of IHL near the homes of the students.

Much depends upon the capacity provided by Government. In the United States, public IHL accommodate more than 60 per cent of the students and represent about 60 per cent of the educational budget. Under the stress of rising costs and demands for space, the public IHL become increasingly important. Taxes provide a more productive source of revenue than private gifts and tuition fees. In 1960, a student at a public IHL had to pay on the average almost $ 200 for tuition and other fees as compared to almost $ 900 at an independent IHL. (In some IHL, tuition fees are more than $ 2,000.) If a student lives near a public IHL the cost of his education will be reduced to a minimum, but if he lives far away it may be more expensive for him to attend a public IHL than a private one. A fairly broad survey by the College Entrance Examination Board showed that of those who replied about 20 per cent of students lived at home and almost 80 per cent away from home. In a national sample, the percentage living at home would probably be larger[1].

Public higher education in France in 1955 cost 106,250 old francs per student, or about $ 210. It ranged from Fr. 76,200 for law to 125,500 for medicine and pharmacy and Fr. 144,800 for science. In the University of Paris the average cost was Fr. 83,500 ; in other universities, Fr. 122,500. The differences in unit cost are explained by variations in the student-teacher ratio and also by the high cost of scientific laboratories and equipment. Fees are not based on costs, otherwise students would be discouraged from taking certain subjects. The fees paid by the students vary from 5½ to 8 per cent of total expenditures, amounting to 6 per cent for the sciences.

In contrast to the French practice, in the United States there is some tendency in public IHL to fix tuition fees on the basis of costs. For example, average tuition fees in public IHL are one-quarter as much as in the private IHL, whereas the corresponding ratio for medical education is one-half. In 1961-62 tuition fees amounted to 12 per cent of general and educational income in public IHL and 32 per cent in independent IHL.

The cost structure varies greatly between the United States and France. In France unit costs in secondary schools are almost 2⅔ times as high as those in primary schools ; they are only about 13 per cent higher in IHL than in secondary schools. In the United States unit costs in secondary schools are about only 60 per cent higher than in primary schools. Rough calculations show that in 1959-60 unit costs were as follows :

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[1] N. Cliff and R. B. Ekstrom, *Practices and Attitude in Paying for College*, CEEB, 1962, p. 87.

In US dollars.

	FRANCE (1953)	UNITED STATES (1959-60)
Primary	70	300
Secondary	188	480
Universities	212	1,320

The increase in cost from primary to secondary school is relatively about three times as great in France as in the United States, but from secondary school to the university the relative increase is about 13 times as great in the United States. For other institutes of higher education the unit cost was Fr. 380,000 or roughly $ 760[1].

In the United Kingdom the cost to the student is kept down by means of large government subsidies to IHL and direct subsidies to students. Roughly 75 per cent of the income of universities comes from government and 90 per cent of that of higher education as a whole. The government increased its contribution from £ 26 million in 1937-38 to £ 219 million in 1962-63 (est.) (1962-63 prices). The Robbins Committee estimates that from 1963-64 to 1980-81 public expenditure on full-time higher education will rise from £ 206 million to £ 742 million.

The major elements in this increase are given in Table 3.

Especially important are the sums of £ 244 million to provide for additional students, £ 56 million for additional capital, and £ 236 million for growing productivity. That is to say, as productivity increases at 3½ per cent per year in the economy, higher education will have to pay correspondingly more for its services. Of the total rise of £ 536 million, teaching and research are to account for £ 153 million, student maintenance £ 80 million, loan charge £ 11 million, and capital £ 56 million. An allowance of £ 236 million should be added for growth in real income[2].

With the government providing 90 per cent of the costs of higher education and most of the tuition fees and maintenance of students, the British system is apparently a most democratic one. The student has only to obtain entry to an IHL and his financial worries are over. The undemocratic feature is in the manner in which many of the young are prevented from obtaining access to IHL.

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[1] My calculations. See especially *Coût et Développement de l'Enseignement en France*, Institut National de la Statistique et des Etudes Economiques, 1958 ; *Financing Public Schools 1960-1970*, National Education Association, 1963 ; « Preliminary Report of Financial Statistics », in *Financial Statistics of Higher Education*, 1961-62, HEW ; *Summary Report of Financial Statistics ofHigher Education, 1959-60*, HEW and S. Mushkin, (ed.), *Economics of Higher Education*, Chapter 1, HEW.

[2] Robbins Report, pp. 199-203, Appendix Four, Part IV ; also see *University Grants Committee, 1960-61*, 1962, Cmd 1855 ; and J. Vaizey, *The Costs of Education*, pp. 156-7.

TABLE 3. COMPONENTS OF THE ESTIMATED INCREASE IN PUBLIC EXPENDITURE ON FULL-TIME HIGHER EDUCATION, BETWEEN 1962-63 AND 1980-81 (CAPITAL AND CURRENT), GREAT BRITAIN

	CURRENT EXPENDITURE £ MILLION			£ MILLION CAPITAL EXPENDITURE	£ MILLION TOTAL EXPENDITURE
	TEACHING, RESEARCH, ETC.	STUDENT MAINTENANCE	LOAN CHARGES		
Expenditure in 1962-63	98	46	5	57	206
Additional capital expenditure in 1980-81				56	56
Additional current expenditure in 1980-81 :					
For increased number of students	159	76	9	.	244
For changed proportions in institutions and faculties	—6	1	.	.	—5
For increased proportion in residence	.	3	2	.	5
Total provision for expansion	153	80	11	.	244
Expenditure in 1980-81 (with no allowance for growth in real incomes)	251	126	16	113	506
Allowance for growth in real incomes	141	95	.	.	236
Expenditure in 1980-81	392	221	16	113	742

1. Expenditure in both 1962-63 and 1980-81 relates to full-time students.
2. Capital expenditure in 1980-81 is for expansion after 1980-81.

Source : Higher Education (Robbins Report) p. 202.

In the United Kingdom, public funds for higher education in 1962-63 were roughly 15 per cent of the total public funds for education. In the United States the corresponding figure was 17 per cent. This is rather unexpected since the proportion of the relevant age group in IHL is much higher in the United States. There are two reasons for this : the larger proportion in the United States of students in the relevant age groups attending secondary schools, and the fact that about 30 per cent of the income of IHL comes from private sources[1].

It is interesting to compare the structure of income for higher education in Great Britain and in the United States. In the late 1950's Great Britain's universities received 12 per cent of their income from fees and 85 per cent from government, as compared to 25 and 50 per cent respectively for the United States. The contribution from endowment is greater in the United States[2]. But for all IHL, in 1962-63 government contributed 90 per cent in the United Kingdom and 55 per cent in the United States. Fees accounted for 10 per cent of institutional expenditures in the United Kingdom and 27 per cent in the United States[3].

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[1] Robbins Report, Chapter 4, especially p. 149. The United States statistics are by S. E. Harris from various sources. Note : independent IHL spend about 40 per cent of the total for all IHL but one-quarter comes from public funds.

[2] D. S. Lees, *Economics of Higher Education*, 1962, p. 330.

[3] Robbins Report, p. 212 ; « Preliminary Report of Financial Statistics, 1961-62 », in *Financial Statistics of Higher Education, 1961-62*, HEW.

By supporting public IHL the state governments keep down student tuition fees in the United States. Thus, in the early 1960's, the proportion of the income received in the form of fees in private universities was three times as high as in public ones. To that extent, therefore, students in public IHL need less aid than do those in private IHL. This advantage is offset to some extent by the somewhat higher parental incomes of students in private IHL[1].

COSTS PER STUDENT, US AND OTHER COUNTRIES

For 1962-63, I estimate the unit current costs in higher education in the United States at $ 1,528. For the same year, the unit cost for Great Britain was $ 2,100. Per capita income is about twice as great in the United States as in the United Kingdom, so that we should not expect to find current costs per student to be about 40 per cent higher in the latter.

These statistics show that costs are unexpectedly high for third-level education in the United Kingdom. In relation to per capita GNP, the current cost per student in higher education is 141 per cent in the United Kingdom and 55 per cent in the United States.

Why should the costs of higher education by relatively so high in the United Kingdom ? One explanation may be that students seek more expensive curricula in Great Britain than in the United States.

Comparable statistics are available for two types of IHL.

TABLE 4. CURRENT COSTS PER STUDENT AND ENROLMENT, UK AND US

	UNIT COSTS		ENROLMENT AS PER CENT OF TOTAL IHL	
	UK £	US 1957-58 $	UK 1962-63	US 1957-58
Universities	888	1,762	55	44
Teachers' Colleges	588	705	25	9
All IHL	774	1,287	100	100

The high unit costs in Great Britain might partly be explained by the large percentage of students in the high-priced institutions, i.e., universities. If we consider, however, that the unit cost of universities in the United States is 37 per cent more than that for all IHL (and in the United Kingdom 15 per cent), it is clear that the larger proportion in universities in the United Kingdom does not explain the differences. Moreover, the relatively large numbers in the low-cost teachers' colleges should mean lower relative costs in the United Kingdom.

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[1] *Ibid.*

Another relevant factor is the choice of curriculum, for example, the average cost per university student in the United Kingdom was as follows in 1962-63 :

	£
Medecine	983
Arts	423
Pure Science	801
Technology	657

In general, the percentage of students in medicine, science, and technology is much larger in the United Kingdom than in the United States, and this may help explain variations in unit costs. In the universities of the United Kingdom in 1962-63, 55 per cent were in science or medical subjects. In 1959, 34 per cent of new entrants took science subjects and 13 per cent engineering in the four largest Western European countries, and only 8 per cent took engineering in the United States.

In his important book[1], Dael Wolfle shows that concentration on science has been relatively low in the United States. The proportion of bachelors and first professional degrees in the sciences varied between 10 and 14 per cent from 1901 to 1953 ; and degrees in the natural sciences were only 11 per cent of the total, and in engineering only 9 per cent. Concentration on the humanities, education and social sciences was relatively heavy. At the Ph.D. level, a vocational degree, natural sciences became much more important — 42 per cent of the Ph.D.'s conferred in the years 1911-53 were in the natural sciences.

Why is the ratio of new science students to all entrants in IHL so low in the United States ? One reason may be that the percentage of secondary school graduates in relation to the population of corresponding age groups qualifying for admission to higher education is in the range of 60-70 per cent for the 1960's — several times the corresponding figures for Western Europe. Capacity in the sciences declines as intelligence levels become lower. (I assume that the average intelligence is lower when entries are 40-50 per cent of the college age population as compared to 5-10 per cent.) Yet the apparent decline of the average student's intelligence despite increasing enrolment of the revelant age group has been surprisingly small. Improved selection may help explain this. Higher education in Western Europe also tends to be more vocational than in the United States[2], although even in the latter, and despite the stress on liberal education in the colleges, the major objectives are vocational.

Costs of education are high in many European countries. As income levels decline, the ratio of higher education costs to income per capita tends to rise. I observed this tendency in the United States when relating costs to per capita income state by state, although this tendency is not so clear in Western Europe.

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[1] D. Wolfle, *American Resources of Specialized Talent,* 1954, especially appendices.

[2] Much of the statistical material here is from *Resources of Scientific and Technical Personnel in the OECD Area,* OECD, 1963.

The size of the educational establishment also influences costs — if the unit is small, costs per student tend to be high. In the United States, the average university had an enrolment of 7,582, although unit costs were nevertheless high, the explanation being the high standards and advanced instruction of universities. In Great Britain there were 25 universities in 1962-63 with an enrolment of 118,000, or an average of 4,720 full-time students. The enrolments vary from 23,000 to fewer than 1,000 with the median at 3,000 - 4,000. Variations between the United States and the United Kingdom in numbers per university do not suggest large differences in costs due to size, although a number of giant universities in the United States are often low cost units.

The student/teacher ratio may also be a relevant factor. This is important because teaching costs represent about one-half of total costs and two-thirds of current costs. In 1938-39, 1954-55 and 1961-62, the student/teacher ratio in Great Britain was 11.7, 9.2 and 10.4 to 1 respectively, a ratio substantially less than in the United States where it was 13.7 to 1[1]. On the other hand, the proportion of professors in Great Britain was only 13 per cent and 25 per cent in the United States. The Robbins Report estimates a ratio of 8 students per full-time teacher in universities, 8.1 in colleges of advanced technology, 7.1 in the remainder of further education in England and Wales, and 10.1 in Training Colleges ; this means a higher payroll than in the United States.

No firm conclusions can be drawn concerning the size of IHL and unit costs, the level of instruction playing an important part.

I have calculated the cost per student according to size and type of institution for the United States, 1957-58, and have concluded that there is no close inverse relationship between size and unit costs[2].

TABLE 5. COST PER STUDENT ACCORDING TO SIZE AND TYPE OF INSTITUTION

In dollars.

	MEDIAN NUMBERS	COST PER STUDENT
All IHL	578	1,287
Universities	7,582	1,762
Liberal Arts	723	777
Teachers' Colleges	1,122	705
Technology	1,516	1,758
Theology	176	972
Other Professionals	336	843
Junior College	319	500

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[1] I have adjusted for graduate students, part-time students, and others for both the United States and British statistics.

[2] *Higher Education, 1957-58. Faculty, Students, and Degrees*, HEW (My calculations).

An important consideration is the amount of student aid. Whereas, in the United States, student aid offered by IHL is no more than 2 per cent of current expenditures, in Great Britain it is close to 20 per cent. Total aid, inclusive of loans, employment and outside aid is about 10 per cent.

In the United States scholarships come primarily from IHL, 34 per cent of the funds being concentrated in 50 institutions, or only 3 per cent of the total number of IHL. Scholarships per student vary from $ 6 (UCLA) to $ 352 at Yeshiva. Relatively few of these 50 IHL provide scholarship funds equal to 20 per cent of tuition and fees[1].

In general, it is not easy to explain the very high unit current costs in the United Kingdom. The low student/teacher ratio, a relatively heavy concentration on costly science curricula, and the large sums for student aid are probably the most important items tending to raise unit costs in the United Kingdom above those in the United States. But there are a number of factors that tend to increase unit costs in the United States as compared to those in the United Kingdom, the most important being the higher income and cost levels, the relatively greater expenditure on research, and the much higher relative unit costs in universities in the United States than in the United Kingdom[2].

From this we can draw certain conclusions concerning student aid : government in the United Kingdom is much more generous than that in the United States, scholarship budgets being about 10 times as large in relation to current expenditure.

Because unit costs are high in Great Britain and the greater part (90 per cent) of all costs are covered by the government including tuition fees, and because all students are provided with maintenance grants when need is clear, the British student receives large subsidies and generous direct grants. It may be that unit costs are excessive, that is, operation may be inefficient and insofar as this is true, the students' gains may be exaggerated.

COSTS TO STUDENTS AND PARENTS

In the United States, when the costs to the student of higher education are high in relation to family or per capita income, serious problems of financing arise for the student, as shown by Table 6.

On the average the cost of higher education to the student or parents was about $ 1,500 in 1960, but there were large variations. In private IHL the cost of tuition was about $ 700 greater than in public IHL. By 1963-64 the costs may well average $ 1,700[3]. Much

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[1] Holland and Kent, « The Concentration of Scholarship Funds and Its Implications for Education », *College and University Business*, Summer 1962, pp. 471-475.

[2] In this analysis my main sources were the Robbins Report and Appendix Four of the Report : *The United States Statistical Abstract*, 1963, for GNP per capita, and various publications of HEW for enrolment and expenditures in higher education in the United States.

[3] For various estimates also see *Practices and Attitudes in Paying for College*, pp. 3-4, 82.

208

TABLE 6. ESTIMATES OF COSTS TO THE STUDENT IN THE UNITED STATES

In dollars.

YEAR		PUBLIC IHL	PRIVATE IHL	PUBLIC AND PRIVATE	AUTHORITIES
1963	General Survey	1,048	2,024		Keppel
1962	U. Illinois		2,000 to 3,000		Moon
	Away from home	1,600			
	Out of State	2,125			
	Graduate	2,300			
1962-63	General Survey	1,480	2,240		Morse
1959-60	General Survey			1,550	Lansing

Source : Hearings, Senate Committee on Labor and Public Welfare, *Education Legislation*, 1963, p. 2483 (Keppel); Ibid, p. 1093 (Moon); *The Federal Government and Education*, p. 165 (Morse); J. B. Lansing, *et al*, *How People Pay for College*, 1960.

will also depend on whether the student lives at home or away. Costs for a student going to a public IHL near his home may be less than $ 500, exclusive of maintenance at home and income foregone. But a student attending a good private IHL away from home may pay up to $ 3,500 a year. Average annual costs are about 25 per cent of family income, or about three-quarters of per capita personal disposable income. For the average family with a son or daughter at college, the burden of higher education is likely to be heavy, but more easily supportable if the student lives at home and goes to a public institution.

When a student's costs are high in relation to per capita or family income, the need for aid is greater ; they are relatively higher the more impoverished the average resident of the state ; in other words, costs per student tend to be high relative to per capita incomes in the low income states.

Similarly the ratio of the yearly cost of higher education to per capita income is substantially lower in the United States than in Western Europe. One explanation is that a (non-medical) professor at an English university received an average of almost $ 10,000 a year, about the same as his American counterpart, (although at a few of the outstanding universities in the United States, the average pay for a professor is about $ 20,000). On the whole, therefore, salaries are surprisingly high for professors in Great Britain in view of the salary difference in the two countries. The number of professors is relatively lower, however, in the United Kingdom[1]. Smaller enrolments and less effective economies of scale in Western Europe may also put up costs. Despite the fact that in general tuition fees are still substantial in the United States and low or non-existent in Europe, the ratio of student costs to per capita income tends to be high in Western Europe as compared to the United States.

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[1] *Higher Education*, Chapter 3, page 46 ; *Higher Education and Planning and Management Data*, 1957-58, HEW, page 5.

TABLE 7. PERCENTAGE OF COSTS PER STUDENT IN IHL TO PER CAPITA INCOME IN A RECENT YEAR

RESULTS ARE ONLY ROUGHLY CORRECT[1]

United States	62
Canada	70
Great Britain	94
Germany	90
Denmark	72

SOCIO-ECONOMIC ASPECTS

Students in IHL generally come from high income groups, their parents being in the more sought-after occupations, e.g. professions and management. A study was made in the United States of boys and girls in the IHL age group, a percentage breakdown of those attending IHL being made according to the parents' occupation (see Table 8).

TABLE 8. IHL AGE GROUP-PERCENTAGE BREAKDOWN OF THOSE ATTENDING IHL ACCORDING TO PARENTS' OCCUPATION

PARENTS' OCCUPATION	PERCENTAGE OF YOUNG PEOPLE ATTENDING IHL	
	BOYS	GIRLS
Professionnal		
Scientific, non-medical	65	69
Medical	83	84
Education (non-college)	61	76
Other	59	75
Business - Supervising	61	55
Labour		
Skilled	32	24
Unskilled	32	24

Source : C. C. Cole, Jr., *Encouraging Scientific Talent*, 1956, p. 147.

Similar conclusions may be drawn from other studies in the United States. « ... Education of the spending unit head proved to be the most important factor influencing the education of the children... » The other main determinants were (in order of importance), occupation and the number of children. Earnings ranked seventh as a factor in the educational achievement of children[1].

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[1] The British figure is an under-estimate, since I have included only the average grant by the government. Costs exceed that figure. The material is derived from :

Income and population statistics from *Monthly Bulletin of Statistics*, UN, and *International Financial Statistics*, IMF.

Great Britain-subsidy from *Grants to Students, Report of Anderson Committee*, 1960, Cmnd 1051.

United States — see earlier estimates.

Germany — « German Students Have Hard Time », *London Times, May 30, 1958.*

Denmark — Association Internationale d'Information Scolaire Universitaire et Professionnelle, *Document No. 4*, 1957.

Canada — *The Case for Increasing Student Aid*, Industrial Foundation for Education, 1958.

Economic difficulties considerably influence enrolment at IHL. The higher enrolment rate for the children of parents in the top occupations is itself an indication of the differences in income between the higher versus lower occupations. The importance of financial position is also made clear by the relation of the number of withdrawals from IHL to income levels. One study shows that after military service for men, and marriage for women, financial need is given as the most important reason for withdrawal from IHL in the United States[2].

The percentage of children born in Great Britain in 1940-41 who received full-time higher education is shown in Table 9.

TABLE 9. PERCENTAGE OF CHILDREN BORN IN GREAT BRITAIN IN 1940-41 WHO RECEIVED FULL-TIME HIGHER EDUCATION, BY FATHERS' OCCUPATION

FATHER'S OCCUPATION	DEGREE LEVEL	OTHER
Higher Professional	33	12
Managerial and other Professional	11	8
Clerical	6	4
Skilled Workers	2	2
Semi and Unskilled	1	1

Source : *Higher Education*, Report of the Committee Appointed by the Prime Minister under the Chairmanship of Lord Robbins, October 1963, p. 50.

An indication of the greater vertical mobility in the United States as compared with Great Britain is obtained by comparing the ratios in the two countries of the percentage at college with a professional or management background to the percentage of those with a labour background. The ratio is roughly 2 to 1 in the United States, and about 20 to 1 (for higher professions) and about 8 to 1 (for managerial and other professions) in Great Britain.

In Great Britain, the economic factor is also shown to be very important.

> « Clearly the economic circumstances of the home are very influential : even in families of the same occupational level, the proportion of children reaching full-time higher education is four times as high for children from families with one or two children as from those where five or more children have claims on the family's resources...[3] »

In other countries of Western Europe, the economic and occupational status of the parents determines who does and who does not go to IHL. In Sweden, for example, the proportion of the working classes going to *gymnasium,* the major path to IHL, has been distressingly low. (Most graduates of a *gymnasium* go to IHL and the percentage tends to rise.)

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[1] H.E. Brazer and M. David, « Social and Economic Determinants of the Demand for Education », in *Economics of Higher Education*, 1962, S. Muskin, ed., page 27.

[2] *Retention and Withdrawal of College Students*, HEW, 1957, page 91.

[3] Robbins Report, page 51.

> « ... in the first post-war years only 2-3 per cent of all the children of manual workers — representing half of the labour force — entered the *gymnasium* whereas about 3/4 of the children from families where the fathers were university graduates passed through the *gymnasium.* There have been big changes in the social recruitment to the *gymnasium* in the last decade. But still the more wealthy half of the population send four times as many children to the *gymnasium* as the other half of the population does. »

But the situation has improved. The percentage of manual workers among the fathers of the students at universities and colleges was 8 in 1947 and 14 in 1960[1].

The British Report *15 to 18*[2] states that the children of English professional or managerial parents stay at school much longer than the children of parents having other occupations.

TABLE 10. PERCENTAGE BREAKDOWN OF NATIONAL SERVICE RECRUITS TO THE ARMY AND RAF, BY AGE ON LEAVING SCHOOL AND FATHER'S OCCUPATION

FATHER'S OCCUPATION	NUMBER	RECRUIT'S AGE ON LEAVING SCHOOL			
		15 OR UNDER	16	17	18 OR OVER
		%			
Professional or Managerial	929	25	24	17	34
Skilled Workers	3,666	78	15	3	4
Unskilled Workers	852	92	6	1	1
All above, inclusive of Clerical and Semi-Skilled	7,275	72	15	5	8

Source : 15 to 18, p. 8.

Of the National Service men entering the army, nine-tenths of the top 10 per cent stayed voluntarily at school for at least one year. But more than four-tenths left by the time they were sixteen. Of all men in ability group I, 41 per cent left school at 18 or later, but only 14 per cent of the sons of manual workers[3].

Similar statistics are available in other countries. For Austria, in the early 1950's, fathers of sons at IHL were in the following occupations :

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[1] *Educational Policy and Planning in Sweden,* January 1964.

[2] *Report of the Central Advisory Council for Education - England,* Vol. II, (Report), 1959, pages 8-15.

[3] *Ibid.,* page 9.

FATHER'S OCCUPATION	PER 1,000 STUDENTS
Government officials and employees	267
Employees in Industry and Commerce	156
Farm owners and workers	60
Industrial workers	36

When allowance is made for the numbers in each occupation, the disproportionate percentage from higher occupations is even more evident.

Of 37,075 students in IHL in Italy, more than 31,000 had parents who are in entrepreneurial, professional, managerial or salaried occupations ; only 4,163 were children of wage earners[1].

In Sweden, entry to the *gymnasium* represents the greatest obstacle for those from modest backgrounds ; once this has been surmounted they do much better. We should also bear in mind that the recent improvements in the figures for children of working men are larger than they seem to be because the proportion of labourers in the working population is declining[2]. In general, however, the children of parents in the lower paid occupations are far from proportionately represented in IHL.

A study in Germany in the late 1950's, estimated that only one sixth had sufficient income to meet room and board costs and fees. More than one-third of the students earned money during term time, and one-tenth worked more than 10 hours per week[3].

In Denmark, although the largest part of the population consists of workers, their sons represent only 8 per cent of the students at IHL ; whereas the sons of university trained parents, a small part of the population, represent 25 per cent of the students[4].

In the USSR, at first policy was to discriminate against the children of the upper classes, but it is now to provide aid on the basis of need and ability. The student receives a wage in addition to his expenses. Seventy-five to 97 per cent of these students receive financial aid from the government, the amount depending on the school, the subject and the quality of the work[5].

The fact that the number of children of well-to-do parents in higher education is relatively large does not mean that aid programmes would result in a proportionate number of children from the working classes attending IHL. Undoubtedly, the children of the more successful parents also have a higher level of intelligence, and possibly greater motivation. But few would deny that many children of outstanding ability are unable to profit from higher education because of financial difficulties.

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[1] *Manual of Educational Statistics,* UNESCO, 1961, pages 163-166 ; cf. « German Students' Hard Times », London *Times,* May 30, 1958 ; and « Disquieting Trends in Italian Universities », *Ibid.,* April 27, 1960.

[2] Cf. O. Ruin, *The Selection Process in the Swedish Educational System,* 1963.

[3] « German Students' Hard Times », *London Times,* May 30, 1958.

[4] *Situation Sociale des Etudiants Danois,* page 5. Association Internationale d'Information Scolaire, Universitaire et Professionnelle, Document No. 4.

[5] See De Witt in S.E. Harris, ed., *Economic Aspects of Higher Education,* 1964, OECD, and I. Inshumilin, *Soviet Higher Education,* 1962, page 53.

An examination of the numbers graduating from secondary schools, entering IHL, and graduating from IHL throws further light on this subject. Enrolment in IHL is relatively high in the United States ; the greater availability of aid in some European countries, however, makes it possible for a larger proportion of the best students there to attend IHL than in the United States.

EDUCATIONAL ACHIEVEMENT AND MOTIVATION

Exclusion from education in Western Europe is especially striking at the secondary school level. The ratio of graduation from secondary schools in 1963 in relation to the population of corresponding age runs from 7 per cent for the United Kingdom and the Netherlands to 73 per cent for the United States. An increase in this ratio for Western Europe would require higher per capita income, modifications in the educational system including increased facilities, and additional student aid. In view of the high income level in the United States, large enrolments in secondary schools are possible without substantial aid to students. One should not, of course, conclude that because almost three-quarters of the population of relevant age are in secondary schools in the United States that Western Europe needs similar numbers. The economy of the United States may require large numbers of secondary school graduates to meet the need for clerical workers, technicians, etc. Moreover, with per capita incomes two to three times as high, the United States can afford much more liberal education, e.g. education uniquely for cultural improvement. The easy availability of higher education in the United States leads to much over-qualification, that is, educational achievement beyond what is needed for eventual employment in many cases.

In Western Europe the proportion of new entrants to higher education in relation to the number qualified is surprisingly higher than in the United States. (Cf. Column 4 of Table 12.) In the United States 40-50 per cent of those eligible go to IHL, and in the major countries of Western Europe from 80 to 99 per cent, (although substantially less for the poorer countries). Availability of aid is an important factor for Western Europe, and if more were available in the United States the ratio of entrants to those qualified would rise.

Despite the greater attrition in the United States in the passage from secondary to higher education the percentage enrolment in IHL of those in the relevant age group was from 4 to 12 times larger than that in a number of Western European countries in 1959, and 3 ½ to 9 times larger in 1963, the latter ratio suggesting recent relative improvements in Western Europe. Promises of new facilities, increased aid, rising income, the greater need for trained manpower and the influence of a democratic tendency have stimulated higher education in Western Europe.

The situation in Great Britain, where first degrees equal 21 per cent of enrolment, reflects the effects of generous and continued

TABLE 12. SECONDARY SCHOOL GRADUATES, NEW ENTRANTS AN
AS PERCENTAGE OF RELEVANT AGE GROUPS AND OF THE OTHE
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COUNTRY	SECONDARY SCHOOL GRADUATES						NEW ENTRANTS TO HIGHER EDUCATION AS A PERCENTAGE OF					
	AS A PERCENTAGE OF RELEVANT AGE GROUP 1			SCIENTIFIC BRANCHES AS A PERCENTAGE OF ALL GRADUATES 2			RELEVANT AGE GROUP 3			GRADUATES OF SECONDARY SCHOOLS 4		
	1950	'59	'70	1950	'59	'70	1950	'59	'70	1950	'59	'70
U.S.	59	65	79	—	—	—	24	34	38	43	50	50
France	5	11	19	48	60	61	4.6	9.1	13.9	94	81	75
Great Britain . . .	4	6	9	46	47	51	3.4	4.4	—	—	78	—
Germany	4.5	5	8	—	—	—	—	4.1	7.8	84	81	88
Italy	4	6.5	12.5	25	21	31	4.8	6.6	12.5	100	99	99

Source : Adapted from OECD, *Resources of Scientific and Technical Personnel in the OECD Area,* 1963.

aid to students, good admission policies, high teaching standards, and the possibility of obtaining a degree in three years. The fact that greater emphasis is given to vocational education in Great Britain at university level, as compared to the United States, may also mean less wastage. The record of other European countries does not seem any better than that of the United States. The high

TABLE 11. EDUCATIONAL ACHIEVEMENT, VARIOUS LEVELS AND COUNTRIES, 1959-1963

COUNTRY	SECONDARY SCHOOL GRADUATES QUALIFIED FOR ADMISSION TO HIGHER EDUCATION AS A PERCENTAGE OF CORRESPONDING AGE POPULATION	NEW ENTRANTS TO HIGHER EDUCATION AS A PERCENTAGE OF CORRESPONDING AGE POPULATION	TOTAL ENROLMENT IN HIGHER EDUCATION AS A PERCENTAGE OF CORRESPONDING AGE POPULATION		FIRST DEGREES AS A PERCENTAGE OF CORRESPONDING AGE POPULATION	FIRST DEGREES AS A PERCENTAGE OF TOTAL ENROLMENT
	1963	1963	1959	1963	1959	1959
	1	2	3	4	5	6
United States	73	34.0	36.6	37.6	16.9	11
France	17	12.2	5.4	6.9	3.4	12
Sweden	14	9.1	7.1	10.5	4.3	12
Italy	10	10.0	3.6	5.0	2.6	12
Great Britain	7[1]	4.4[1]	4.1	4.4	3.4	21
Netherlands	7	4.1	4.7	5.4	1.7	7
German	8	7.3	3.1	4.2	2.7	11

1. = 1959.

Source : Adapted from OECD *Resources of Scientific and Technical Personnel in the OECD Area,* 1963.

.LL STUDENTS IN HIGHER EDUCATION, SCIENTIFIC STUDIES, EACH
ATEGORIES ; FOR U.S., FRANCE, GREAT BRITAIN, GERMANY, ITALY
959, 1970

ALL STUDENTS IN HIGHER EDUCATION AS A PERCENTAGE OF RELEVANT AGE GROUP			FIRST DEGREES AS A PERCENTAGE OF RELEVANT AGE GROUP			FIRST DEGREES IN SCIENTIFIC STUDIES AS A PERCENTAGE OF ALL FIRST DEGREES IN HIGHER EDUCATION			FIRST DEGREES AS A PERCENTAGE OF ALL STUDENTS IN HIGHER EDUCATION			INCREASE IN TOTAL OF STUDENTS IN HIGHER EDUCATION, AS A PERCENTAGE	
5			6			7			8			9	
1950	'59	'70	1952	'59	'70	1952	'59	'70	1952	'59	'70	1950-59	1959-70
26	37	41	14.0	16.9	21.0	19	22	22	13	11	12	48	77
3.5	5.4	10	2.3	3.4	8.3	29	42	57	12	12	13	45	157
3.3	4.1	5.0	2.5	3.4	—	40	41	—	19	21	—	20	58
2.4	3.1	5.3	2.5	2.7	—	28	29	—	17	11	—	55	35
3.0	3.6	6.3	2.6	2.6	5.4	26	27	25	14	12	12	21	80

level of attrition, as we note elsewhere, is in part related to economic capacity.

In European countries, in general, those who go to universities are interested primarily in vocational advantages not in a liberal arts education. (There are exceptions, of course, for example, Oxford and Cambridge.) Concentration on vocational objectives — for example the strong interest in the sciences — is partly the result of the higher standards in general education at secondary level in Western Europe than in the United States. Since, in Western Europe, the main purpose is to improve one's economic status, it is to be expected that large sacrifices would be incurred in seeking a higher education. In the United States also, despite the emphasis on liberal education, most students go to IHL to improve their economic position. Hence they and their parents are prepared to make sacrifices, e.g., use their savings, seek part-time employment, get into debt, and compete vigorously for scholarships.

The importance of economic motivation is borne out by the following replies to a questionnaire in the United States :

TABLE 13. THE MOST IMPORTANT REASONS
FOR WANTING TO GO TO COLLEGE

In Percentages.

	BOYS	GIRLS
Degree needed for career	40	30
Financial and business rewards	14	8
Desire to explore several lines of work	10	12
Enjoy studying	5	9
Desire for social development	2	8
Other	29	33

Source : C.C. Cole, Jr., *Encouraging Scientific Talent,* page 145.

ATTRITION

Many able students fail to enter IHL, and many who enter fail to graduate. This loss of talent is to be found everywhere. The Robbins Report summarises very well the ideal objective :

> « Throughout our report we have assumed as an axiom that courses of higher education should be available for all those who are qualified by ability and attainment to pursue them and who wish to do so... »[1]

Failure to attend college should not, however, be considered as a total loss — there are certain compensations and many non-college men and women often succeed and contribute more than if they had gone to college.

What is especially disturbing, however, is the large number of

TABLE 14. ESTIMATED PROPORTION OF STUDENTS OF HIGH ABILITY WHO DO NOT GO TO COLLEGE. SELECTED SAMPLES, U.S.A.

SOURCE	POPULATION	DATE OF HIGH SCHOOL GRADUATION	ESTIMATED PERCENTAGE NOT ATTENDING COLLEGE
National Merit Scholarship Programme . . .	Merit scholars (N = 827)	1957	0.2[1]
	Finalists (N = 6,428)	1957	3.1
	Semi-finalists (N = 7,690)	1957	5.1
	Total (N = 14,945)	1957	3.9
Terman and Oden	Highest 1 or 2 per cent by 1Q, in California schools	1928	12
Phearman	Highest 2 per cent, by achievement tests, among Iowa's high school graduates	1947	8
Wolfle	Highest 2.8 per cent of high school graduates on intelligence test	1953	39
Phearman	Highest 3 per cent of Iowa's high school graduates	1947	36
Iffert	Highest 10 per cent in high school graduating class	1950	28
Corcoran and Keller	Highest 15 per cent, by 1Q, of Minnesota high school seniors	1950	33[2]
Wolfle	Highest 8.8 per cent of high school graduates	1953	45
Educational Testing Service .	Highest 10 per cent, by aptitude test, of public high school seniors	1955	30
Iffert	Highest 30 per cent in high school graduating class	1950	30
Wolfle	Highest 31 per cent of high school graduates	1953	53
Educational Testing Service .	Highest scoring 30 per cent of public high school seniors	1955	47

1. Two students awarded scholarships are having their scholarships held over for 1 year.
2. Percentage not attending college within four years of graduation.

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[1] Robbins Report, page 8.

exceptionally able young people who fail to acquire a higher education[1].

According to Table 14 the percentage not attending college varies from 0.2 per cent for the National Merit Corporation winners to 53 per cent of the highest 31 per cent of high school graduates. Wolfle show that 62 per cent of the top 2 per cent of high school graduates (on the basis of grades and intelligence tests) later graduated from college, and only 47 per cent of the top 16 per cent[2].

The loss of talented children to education is related to financial status, as we have noted. The records of children from lower income homes is clearly inferior. Thus Elmo Roper discovered that « while 35 per cent of the children of professional men and business executives were in the top fifth of their classes, only 16 per cent of the sons and daughters of factory workers ranked in the top fifth ». Part of the explanation undoubtedly lies in low incomes and resultant unsatisfactory environmental conditions.

Again, although a large proportion of the most able go to college, the total is greatly influenced by economic status.

TABLE 15. 1953 NEW YORK STATE HIGH SCHOOL GRADUATES WHO PLANNED TO ATTEND INSTITUTIONS OF HIGHER EDUCATION, FULL TIME

In percentage.

IQ CATEGORY	ESTIMATED PER CENT BY FAMILY INCOME RANGES		
	$ 8,000 AND OVER	$ 7,999 - $ 4,000	UNDER $ 4,000
130 and over	96	79	72
120 - 129	95	72	61
110 - 119	89	58	49

Dean C. Cole, Jr., estimates that each year from 60,000 - 100,000 of the most able high school graduates fail to go to college for financial reasons[3]. Dr. Rexford Moon writes that « the latest figures from Project Talent indicate that at least 120,000 youngsters whose performance indicated the ability to achieve success in these needed professional areas did not attend college last fall »[4].

An indication of the disappointments, although not necessarily of attrition, is suggested by the following Survey Research Center study on parents' aspirations for higher education for their children, as compared with current real rates of enrolment :

> « ...Among those families with incomes in excess of $ 10,000, 95 per cent with children under the age of 10 expect

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[1] E.D. West, *Financial Aid to the Undergraduate*, American Council on Education, 1963, page 84.

[2] D. Wolfle, *America's Resources of Specialised Talent*, 1954, p. 197.

[3] Last few paragraphs based on C. C. Cole, Jr., *Encouraging Scientific Talent*, 1956, p. 77.

[4] *Education Legislation*, 1963, Hearings of Senate Committee on Labor and Public Welfare, p. 1091.

their children to attend college ; of those at this same income level with 18 and 19-year olds, 79 per cent are going or plan to go to college. Similarly at the $ 5,000 to $ 7,500 family income, 80 per cent expect their children to go to college but only 40 per cent actually do so. Among families with less than $ 3,000 income, 40 per cent expect to go but less than 20 per cent do ».[1]

RESIDENCE

It is a well known fact that students who live near an IHL are more likely to attend than those who live beyond commuting distance, one reason being that it is more expensive to live away from home. In the United States, the median charge for room and board in 1962-63 was about $ 600[2], whereas the cost of living at home would generally not exceed two-thirds of this amount. A second reason is the lower incomes of those who live in places far away from IHL.

There is an increasing awareness of the fact that one way of democratising higher education is to establish IHL close to population centres. The early tendency to establish land grant colleges away from population centres in the United States is gradually being corrected. In California, for example, planning takes account of the residential situation of high school graduates. « Seventy per cent of all the 1957-58 public high school graduates of the state come from two small areas... Furthermore, 79 per cent of all the projected public high school graduates in 1975 will come from these two areas. »[3]

It is planned to provide IHL close to the residential centres where almost all high school graduates live. Despite this, however, the University of California is greatly increasing the amount of dormitory space. There is a growing tendency for students to live away from home. The Robbins Report makes similar recommendations for Great Britain :

> ...The proportion in lodgings (since before the War) has ... risen sharply (from 33 per cent to 52 per cent) ... Even without any expansion of student numbers, the amount of housing provided by the Universities would need to rise.
>
> « The expansion we are recommending will make a very great increase in housing provided by universities imperative...» [4]

I have commented elsewhere on the relation of enrolment to location of IHL as follows[5] :

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[1] *Education Legislation Hearings*, 1963, p. 1092.

[2] « Basic Student Charges », *Higher Education*, HEW, 1963. Also see *Grants to Students*, Cmnd 1051, 1960, pp. 31-33, for a discussion of the relative costs when living at home or away.

[3] *Institutional Capacities and Area Needs of California Public Higher Education, 1960-1975*, especially Section 4.

[4] Robbins Report, pp. 194-95.

[5] S. E. Harris, *Higher Education : Resources and Finance*, 1962, McGraw-Hill Book Co., pp. 601-2.

> « To a considerable degree the attendance at college is determined by the proximity of a college to the potential student. Hence it is important if we are to use our IHL effectively to relate our location to source of population...
>
> « The proximity of an institution is an important factor in its per cent of those eligible who attend it. For example, Alameda, Yolo, Santa Barbara and Riverside Counties, where campuses of the University of California are located, rank high in the per cent of those eligible to enter the University of California.
>
> « Similar conclusions are drawn for attendance at state and junior colleges. The percentage of 1955 school graduates who continued their formal education varied from 57 per cent in Napa County to 6.4 per cent in Glenn County, with an over-all figure for the 41 counties of 43 per cent.
>
> « Similar conclusions are to be drawn from the experience at Michigan. In 27 counties with IHL, the percentage of college-age population in college in 1955-56 was 32.9 per cent, and the figure for 56 counties with no IHL was 16.8. Location is of course not the only factor. Where there are no colleges, economic status may well be low also. The importance of the economic issue is also suggested by the fact that the largest percentage (46.6) of college-age group at college was in 7 counties with *state* institutions, excluding Wayne (Detroit). In 8 counties with private IHL only, the percentage was but 23.6.
>
> « In Minnesota also there is a maldistribution of colleges. Whereas 3 counties in the eastern part of the state had 14 colleges, the remaining 18 colleges were scattered among 12 counties, with the entire western half of the state having but 4 IHL. »

Attendance varies with the availability of IHL, in turn related to the agglomerations of population. A 1954 census in France showed that[1] :

> « Numbers enrolled vary greatly from *département* to *département* in relation to population aged 20-29, the regional differences are even larger than for secondary education, but distribution is similar for both groups ; the largest enrolments are in the *départements* which include large uniform agglomerations of population. »

The number of students per 1,000 population varies from below 10 to over 25 :

> « The *départements* possessing a university have a relatively large number of students : thus in the Gironde, Vienne, and Côte d'Or, the number of students in secondary schools is lower than the average, but attendance at the university is higher. In some *départements* more than 80 per cent of the students come from homes near their places of study ; in others, fewer than 60 per cent. »

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[1] *Coût et Développement de l'Enseignement en France*, 1958, pp. 20-21.

In the United States, for a recent year, the number of degree credit students per 100,000 of total populations varied from 92.8 (Delaware), 110 (Virginia), 489.7 (Washington, DC), and 327.3 (Utah)[1]. By regions the lowest was Southeast (137.3), the highest, West and Southwest (238.6). Several factors explain these variations, e.g., economic conditions, accessibility to IHL and tuition fees charged, proximity of IHL to centres of population.

The Robbins Committee, pointing out that in 1938-39, 42 per cent of full-time students lived at home and in 1963 only 20 per cent, the number of students living at home remaining virtually unchanged and the number away rising from 30,000 to 90,000, urged that the growing practice of living away from home should become more widespread. Rising income, desire of students to live away from home, the concentration on specific fields of study by certain universities — all influence the tendency of living away from home. The Committee would also encourage the founding of new universities in the large cities, even though the original reason for building universities in the cities to attract students in population centres has gradually lost its force[2].

In Denmark, a fairly small country, only 42 per cent of the students lived with their parents in 1947, another indication of the tendency to go to college away from home[3].

SOME REASONS FOR DIFFERENCES IN EXTENT OF AID, UNITED STATES AND WESTERN EUROPE

Why, it may be asked, is the proportion of students in higher education so low in Western Europe ? One explanation is the relatively low incomes. With per capita income only 1/3 - 1/2 that of the United States, a smaller proportion of potential students can afford to enter IHL[4]. Secondly, a substantial part of college education in the United States corresponds to secondary education in Western Europe. Thirdly, eligibility for further education is decided very early in Western Europe, an undemocratic process which is gradually being changed. Fourthly, vocational needs may well be smaller in Western Europe, with its less-advanced economy and greater dependence on agriculture. Fifthly, upward mobility is very important in American society, and higher education is the means for achieving this. A democratic society in this age must provide ways for the restless striving and ambition of young people of poor families to improve their socio-economic position. The college is the principal avenue of social mobility today[5].

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[1] *Statistics of Higher Education, 1957-58, Faculty, Students, and Degrees*, HEW, p. 75.

[2] Robbins Report, pp. 162-63.

[3] *Situation Sociale des Etudiants Danois*, 1957, p. 7.

[4] In 1961, the per capita GNP was $ 2,787 for the United States, $ 1,059 for the European Economic Community, and $ 1,224 for the seven countries belonging to the European Free Trade Association.

[5] R. J. Havighurst, « The Social and Political Arguments for Extending the Reach of Education », in *Student Financial Aid and National Purpose*, CEEB, 1962, p. 31.

The greater tendency to provide aid for those who qualify in Europe than in the United States is explained in part by the fact that the numbers involved are small, and the large proportion of *secondary graduates* — as distinguished from the college-age population in general — who go to IHL may also be explained by the fact that the students generally come from high income groups. In 1963, 5 per cent of college-age population in Western Europe attended IHL and 34 per cent in the United States. The relative position of Western European students in their socio-economic structure is therefore undoubtedly higher than that of United States students. The 5 per cent may well have as high an average income as the 34 per cent in the United States.

We should not underestimate aid in American IHL, although the amount in relation to costs, despite heavy reliance on loans and employment, is small. Many IHL help as many as 40-50 per cent of the students, although for the country the average is more likely to be about 25 per cent. Even in a large public institution where tuition fees are low, aid is equivalent to 13 per cent of costs, and 25-30 per cent of the students are helped. The costs of higher education are likely to be excessive unless allowance is made for a reduction of about $ 50 per month for students who live at home. In a small but good private college such as Pomona in California, about 30-35 per cent of the students receive aid : however, with room and board included, the cost is $ 2,800 and the average stipend of $ 1,100 - $ 1,200 may still be insufficient to attract students whose parents are in the low-income groups[1].

SOURCES OF STUDENT INCOME

To the extent that the student's expenses cannot be met by his family, he must rely on aid in the form of scholarships, loans or employment. In the United Kingdom, government grants cover most of the students' costs, whereas in the United States, about 10 per cent of total students' costs ($ 6 billion, i.e., 4 million students at an average cost of $ 1,500) is covered by scholarships, loans and employment.

In 1962-63 the British government's grants to students amounted to £ 46 million for 126,000 full-time students, the dollar equivalent per student being about $ 1,000 (with an allowance for the greater purchasing power of £ sterling than is admitted in the official rate of exchange, this may be as much as $ 1,250). But when allowance is made for the fact that all students do not get grants and some do not get full grants, the average seems very high in comparison with costs per student in the United States. A rough estimate puts full British grants at about 80 per cent of costs per student in the United States, although per capita incomes in the United Kingdom are roughly only 50 per cent of those in the United States[2].

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[1] Especially A. Purdy and J. R. Sanders, in *Student Financial Aid and Institutional Purpose*, CEEB, 1963.

[2] Statistics for the United Kingdom from *Higher Education Report*, Appendix Four.

Bowles' estimates show a small amount of official help to students in Germany ($ 46 per head), Japan ($ 16) and India ($ 11), and large contributions in the Netherlands ($ 174), Sweden ($ 323) and the United Kingdom ($ 329), although India's total is high in relation to its very low per capita income. In making these assessments, I have taken into account the per capita incomes in each. For 10 selected developed countries the average per capita official aid is $ 129, a fairly high figure when compared to income levels. Naturally contributions are smaller for underdeveloped countries ($ 18 for 28 selected less-developed countries). The average for the underdeveloped countries is high in view of their average per capita income, but low when the limited private resources available[1] are taken into account.

Estimates of the sources of students' incomes vary to some extent, as shown by the following examples :

TABLE 16. SOURCE OF INCOME

	COSTS	PARENTS AND RELATIONS	SAVINGS	EARNINGS	SCHOLARSHIPS & AWARDS	LOANS
	$	%				
University of Illinois, 1959 . . .	1,744	36		(second)	14	
University of Michigan, National Survey, 1959-60	1,550	61		23	8	
HEW, 1952-53	1,462	41	20	26	9	1.5

Source : E. D. West, *Financial Aid to the Undergraduate,* American Council on Education, pp. 30-31 ; J. B. Lansing, *How People Pay for College,* 1960 ; HEW, *Costs of Attending College,* 1957, p. 48.

The main contribution is made by parents and relatives, scholarships representing only a small proportion.

Two other breakdowns are given below. In general the first College Scholarship Service (CSS) is a fairly high-income sample,

TABLE 17. SOURCES OF STUDENTS' INCOME — TWO SURVEYS

In dollars.

	CSS SURVEY	SURVEY BY UNIVERSITY OF ILLINOIS 1959-60
Expenses, Third Year, Median	1,923	872
Parents' Contribution, etc., Mean, 1959-60	1,078	314
Students' Savings and Earnings	483	329[1]
Scholarship Aid	410	125
Loan Aid	59	18
Other Sources	68	86

Source : Compiled from *Practices and Attitudes in Paying for College* and *Student Economics at the University of Illinois,* p. 7.

1. Earnings = $ 173 ; reduction of assets = $ 156.

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[1] G.F. Bowles, op. cit., I, page 186.

hence the larger amounts for parents' contributions. Since this sample includes many private and well-known IHL the figures show more from scholarships and relatively less from student savings.

The breakdown of student financing varies according to the level of the parents' income, as shown by the study of an Iowa college. For higher income there is greater recourse to help from parents and less dependence on employment and other aids.

TABLE 18. PARENTS' INCOME AND SOURCES OF STUDENTS' INCOME

PARENTS' INCOME	CONTRIBUTED BY PARENTS OR GUARDIANS AND RELATIONS	PAY, STUDENT EARNINGS OR SAVINGS	SCHOLARSHIPS	LOANS	VETERAN BENEFITS
$	%				
Less than 1,000	26.2	41.4	4.6	3.6	24.0
5,000 - 5,999	42.2	40.2	4.6	4.6	7.5
20,000 and over	78.6	20.8	—	0.1	—

Source : Adapted from E. D. West, *op. cit.*, p. 57.

One striking aspect of student financing is the extent to which aid is given to those with high incomes. For example, a study made in 1952 of high-school graduates in New Mexico showed that 14, 17, 23 and 11 per cent of the children in families whose incomes were respectively 0 - $ 5,000, $ 5,001 - $ 6,500, $ 8,001 - $9,500, and $ 11,001 and over received scholarships[1].

West shows that a family income of $ 12,000 is required to finance a student's budget of $ 1,950. In 1960, 42 per cent of the families in the United States had incomes of less than $ 5,000. In one university the median family income of students with scholarships was $ 7,681 ; without scholarships, $ 9,971[2].

Scholarships are inadequate, and since the middle 1950's the proportion they cover of the costs of higher education has been declining. This decline is less if allowance is made for the rising contribution of outside aid. Aid is geographically highly concentrated, however. According to a National Merit Corporation study, 37 IHL (out of almost 2,000) offered 43 per cent of the scholarships. The states of New York, Pennsylvania, and Massachusetts contribute one-third of the scholarship money, and 19 per cent of the scholarships. Forty-two states had slightly less than one half ($ 45 million out of $ 98 million) of the nation's scholarship money[3]. Regional differences are also important, e.g. the Northeast with 28 per cent of the resident college enrolment had 43 per cent of scholarship money in the middle 1950's[4].

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[1] E. D. West, *op. cit.*, p. 58.

[2] *Ibid.*, pp. 53-55.

[3] *Ibid.*, pp. 32-37.

[4] S. E. Harris, *op. cit.*, p. 226.

I have already noted that scholarships are declining in the United States — partly as a result of the growing importance of loans and employment. From 1936 to 1956 the average scholarship stipend in the United States rose from $ 133 to $ 277, or by more than 100 per cent ; but per capita disposable income rose from $ 510 to $ 1,741, or 341 per cent, the total amount for scholarship increasing from $ 9 to $ 96 million[1].

Rexford Moon finds, however, that the number of scholarships rose from 237,000 to only 288,000, between 1956 and 1960 representing a decline from 14 to 11 per cent of undergraduate enrolment[2]. Moon's estimates are correct for the years 1956 to 1960, for student aid as a percentage of total costs declined from 13 to 8 per cent. But from the 1930's to 1956, aid increased from approximately 5 to about 8 per cent of tuition fees. Scholarship money provided by IHL increased about 5 - 6 times in this period, and outside money even more.

LOANS

Loans to students are becoming increasingly important in some countries, e.g. the United States and Norway ; in others there is strong opposition to this form of financing. The British have given loan financing serious consideration but have repudiated it.

In its 1960 report the British Anderson Committee was clear on this point :

> ... We were, however, struck by the official use of the system of loans to students among other countries ... and we felt it right to consider the merits of some such system ; but though we recognize that a loan may occasionally be a reasonable way of meeting a particular difficulty, we have had no hesitation in rejecting loans as an integral part of the national award system. The principle of using loans as a standard means of financing students has now been abandoned by public authorities in Great Britain, and our evidence disclosed no wish to see it revised[3] ...

Writing three years later, the Robbins Committee also repudiated a loan programme for the time being, largely because they feared it would have a discouraging effect at a time when more entrants and a solution to the problem of wasted manpower were needed. Although admitting that higher education is a means of raising income, the Robbins Committee contended that the advantages of higher education were not restricted to the monetary aspect, and that it was not appropriate to tie the financing of education to primary advantages which might subsequently become less important. But the committee agreed that the time may come when the principle of attendance at IHL is more firmly established, and when arguments of justice in distribution and the advantage of individual responsibility may carry more weight. At that time a loan programme might be acceptable[1].

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[1] *Ibid.*, p. 243.

[2] Senate Labor and Welfare Committee, *Hearings on Education Legislation*, 1963, p. 1093.

[3] *Grants to Students*, Cmnd. 1051, 1960, p. 7.

The report, *Educational Policy and Planning in Sweden* (1964), shows that the Swedish government is moving towards loan financing. The government makes generous grants at both the *gymnasium* and university levels. But for other than « study grants », the student must repay the government in Kronor of fixed purchasing power. These repayments are to begin 5 years after studies have been completed and continue until age 50, allowances being made for economic difficulties[2].

Why, one may ask, does the United States support loan financing and Britain oppose it ? One reason is undoubtedly the higher incomes in the United States ; where incomes are low there is less willingness to borrow large sums of money. A second reason is the difference in the proportions enrolled in IHL in the two countries. In Britain, enrolment in relation to population of the corresponding age group is but a fraction of that in the United States, so that the British find it possible to provide adequate grants for financing students' expenses. A similar programme would cost from 1 to 4 billion dollars yearly in the United States, depending on the method of comparison, or perhaps 5 - 20 times the amount of scholarship money available. Finally, there is the widely held view in the United States that a student should pay part of his bill : a loan is to that extent to be preferred to a grant.

In the United States, many other arguments are presented in support of a loan programme :

i) Whereas the scholarship programmes based on need are inequitable because they penalise those who have saved to meet their educational needs, the loan programme requires sacrifices by both those who saved and those who did not.

The Admission Officer of Yale University comments :

> « ... I urge that we regularly offer both gift help and self-help in our awards ... Self-help ... means either a long-term loan or a term-time job, or some combination of the two.

....

« ... How ironic it is that the nation which has most strongly defended free enterprise and economic competition should adopt without serious question a philosophy for awarding undergraduate financial aid which resembles Marxist doctrine. 'To each according to his need, and from each according to his ability' ...

....

« ... We were motivated not only by the argument already cited in favor of self-help but also by a more unfashionable view that there might be something desirable about asking a man to do all he reasonably could to help himself before the college gave him aid[3] ...

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[1] *Robbins Report*, pp. 210-212.

[2] *Robbins Report*, pp. 14-17.

[3] A. Howe, Jr., « Centralizing Student Aid Activities », in *Student Financial Aid and Institutional Purpose*, CEEB, 1963, pp. 46-51.

ii) A second argument in favour of loans is based on the theory that if generous scholarships are offered, IHL will raise their tuition fees, the net result then being that the most able and needy students will be helped but the vast majority will have higher tuition fees to pay. However, as I noted elsewhere, it is not absolutely clear that it is the needy who get the scholarships. It is altogether too evident that the lowest income groups require so much help that the major IHL tend to neglect them.

A recent survey of 65 IHL by Elmer West and Charles Gleazer showed that :

TABLE 19. AID TO STUDENTS — BREAKDOWN BY FAMILY INCOME

FAMILY INCOME IN DOLLARS	PERCENTAGE TO WHOM AID GIVEN
less than 3,001	59
3,001 - 5,000	63
5,001 - 7,000	66
7,001 - 9,000	65
9,001 - 11,000	62
11,001 - 13,000	57
more than 13,000	38

Evidently, the size of family income is not a primary factor in the granting of financial aid to students. Undoubtedly, because of environmental factors, many in the higher income groups obtain better grades and aptitude scores[1].

iii) Where scholarships are insufficient, greater recourse is had to loans or employment. In Germany, where scholarships are rare, students rely far more on employment than in the United Kingdom. One reason for the limited scholarship programme in the United States is the increasing fear that generous scholarships would result in able young men and women being enticed to the affluent Northeast from the South and West, where they are badly needed. Partly in order to contend with this argument, many authorities have urged that a ceiling of about $ 800 be adopted for scholarships. Most students could then manage with small private resources and employment so long as they do not go to expensive and high-prestige IHL. Even this limitation has not resulted in large scholarship funds in the United States. Hence the pressure for more loans.

iv) When scholarships are difficult to get, the need for loans and employment becomes greater. In this sense, scholarships disbursed as loans provide a democratising influence. They enable many students who are not too outstanding to obtain a higher education. The higher income classes in particular should benefit, although more National Defense Education loans seem to go to those with average incomes, or less, than might be expected.

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[1] For the table and pertinent remarks on these issues, see two articles by John Morse : *Our Groaning Financial Aid Structure*, Hartford, January 24, 1964 (CEEB), and *National Association of College Admissions Councellors*, 10-5-63.

v) Many prefer loans to scholarships on the grounds that they cost less and that the burden of higher education is then placed mainly where it belongs, i.e. those who benefit from higher education.

In this respect, would it not be better to provide for repayment over a period of 40 years — as for housing mortgages, for example ? (The period of repayment is being increasingly extended.) I have estimates that a loan of $ 3,000 with repayment over 40 years would cost only about 1 per cent of the lifetime income of the borrower.

As a result of rising productivity and inflation, the debt would become much lighter. For example, let us assume a 3 per cent rise in productivity per year (as in the past) and inflation of only 1 per cent (a most modest assumption). The debt would then be reduced by more than 70 per cent, or, if we assume a 2 per cent inflation, by 80 per cent.

A final argument in favour of loans is that more credit, and hence more resources, would then be available for higher education. The increasing use of credit in the purchase of housing and automobiles and the consequent diversion of more resources to these industries provides an example in point.

A number of arguments are used against loans, for example, that women will not borrow because they are afraid that a negative dowry would discourage suitors. Experience gained through loans under the National Defense Education Act does not support this theory. Women borrow in proportion to their attendance at IHL. In the United States, as in Great Britain, many object to loans on the grounds that a student should not leave college with a heavy debt. Moreover, loans tend to discourage students from seeking entry to other than the best paid professions. A solution might be to fix repayments on the basis of incomes, e.g., both a clergyman earning $ 5,000 per year, and a physicain earning $ 35,000, would pay 1 per cent of his income[1].

Loans are frequently assumed to be the best form of aid for relatively well-to-do families which nevertheless find it difficult to meet the cost of higher education, if concentrated in a short period of a few years. John Morse, however, shows that 71 per cent of the loans under the National Defense Act were made to families with lower-than-average income. He also notes that 13 per cent of the borrowers came from families whose incomes were over $ 13,000[2].

SCHOLARSHIP PROGRAMMES

The ideal form of aid is the scholarship, chiefly because it reduces the waste of talent due to insufficient financial help. Undoubtedly the waste of talent is serious. See Table 14.

It is not clear, however, that scholarships really reduce the waste of talent to any great extent, for, where space permits, the result is often a mere increase in enrolments. In some countries, where there is a large proportion of students with scholarships covering most of the costs, this aid will often be the deciding factor for continuing study. The British system is a good example of this for in view of the limited space, the effect is likely to be that the able but impecunious will to some extent dislodge the affluent but less able. In the UNESCO study the authors justly said that in most countries discontinuation of aid is not likely to reduce the student body appreciably.

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[1] I have discussed the question of loans fully in my *Higher Education : Resources and Finance*, McGraw-Hill, 1962, Chapters 17-22. The reader will find many relevant references there.

[2] J.F. Morse in *Student Financial Aid and Institutional Purpose*, page 13.

> « Favourable effects on enrolment cannot be expected to occur unless a substantial proportion of the student body — around 15 per cent — receive enough aid to cover a large part of their needs. In higher education, France, Ghana, Senegal, the United Kingdom and the United States appear to fit into this category, while India and Japan are borderline cases »[1].

In the poorer countries, where 95 per cent of the students receive no aid but continue despite their impoverished condition, it is unlikely that the other 5 per cent would withdraw if the meagre aid were discontinued.

For the countries in the UNESCO survey, aid was available to 3.7 per cent of the pupils in secondary schools in the less-developed countries, and 4.2 per cent of those in the richer ones ; in higher education the figures were 8.7 per cent in the poorer and 32.9 per cent in the richer[2].

I am not convinced that scholarship aid in the United States substantially increases enrolment or greatly reduces the loss of talent. The middle or upper classes go with or without scholarships, and the poor do not receive enough help as a rule to make a difference. With an average scholarship of about $ 300 and average costs at least $ 1,500, the effects of aid on enrolment are not considerable. The scholarship programme tends to equalise conditions and this, to some extent, changes the student body. To the extent that substantial scholarships are available, say $ 1,000 or more, many recipients are able to get a higher education who otherwise would not. But many studies have shown that students who unsuccessfully apply for scholarships do, for the most part, go to IHL nevertheless[3].

In the United States, IHL use scholarships as a means of attracting the kind of students they want. The scholarship determines largely where the student goes, not whether he or she goes to college. Competition for students through offers of scholarships has become so severe that many IHL have agreed in cartel fashion to restrict aid to the amount suggested by the assets of the family. In many states where public and private IHL compete for students, the latter tend to offer scholarships not related to need but sufficient to offset the difference in tuition between public and private IHL.

Aid is least available where it is most needed, that is, in the poor countries and for the low-income groups in the wealthy nations. Scholarships are available mainly to the middle- and high-income groups, for the low-income groups cannot afford to go, and the IHL are not disposed to make large stipends to attract the poor.

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[1] *Access to Higher Education,* UNESCO and the International Study of University Admissions, I, p. 201.

[2] *Ibid.,* p. 193.

[3] These questions are discussed fully and with many references in S.E. Harris, *op. cit.,* Chapter 15.

As a rule, the criterion for aid is need, although the Admission Officer also takes into account a student's ability. Need is likely to play a more important part in the developed countries, for in the poor countries almost all are in need. According to UNESCO, in 7 developed countries, need was the predominant consideration, and achievement in 3 countries (in 3 countries both were considered) ; in the less-developed countries, need predominated in 8, academic achievement in 11, and a mixture of both in 10 countries.[1]

One study concluded as follows :

> « ... in all, perhaps 11 per cent of the able students in the high school class of 1947 might have tried to go to college, besides those who did, if they could have been assured of acceptance by the right college, and financial assistance. »[2]

A general survey reveals that students in families with income of $ 5,000 or less receive relatively more scholarships than those in the $ 5,000 or over class. But as the size of the stipend from college-contributed scholarships increases, students from the $ 5,000 or under class receive a declining share, the explanation being that the IHL providing the most generous scholarships attract students from the high-income groups.[3]

In a thorough survey of the scholarship question, West concluded :

> « In very general terms, it is reasonably safe to state that the available financial aids go to the socially and economically favored segment of the population. This is true because college students come from families who are average or above in economic status, social status, and education... »[4]

In 1963, after years of legislative discussion, the United States government decided that further study of the scholarship problem is needed. It is not easy to estimate the amount of scholarship money that should be made available. The following are some of the points that should be taken into consideration :

i) The extent to which talent is being lost because of lack of aid. Henry Dyer complains of the failure of college admission officers to examine aid in relation to the socio-economic origins of students ;

ii) The amount of money required to make up the deficiency. (Estimates show that if 100,000 good students are lost each year, scholarship aid to many more than 100,000 would be required if these are to be recuperated) ;

iii) The extent to which recourse is made to loans and em-

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1. *Access to Higher Education*, page 193.
2. E.D. West, *Background for a National Scholarship Policy*, 1955, p. 24.
3. E.D. West, *Financial Aid to the Undergraduate*, 1963, pp. 53-55.
4. *Ibid.*, p. 53.

ployment. In such countries as Germany, the United States and the USSR, where employment is encouraged, less scholarship money is required ;

iv) The extent to which students live at home ;

v) The policy adopted concerning aid to students who are just below the best, i.e. below the top 5 per cent of high school graduates. (The top 5 per cent will be sought by most IHL, and their financial problems are not likely to be serious in most developed countries.) Many fear that a generous scholarship programme would mean higher tuition fees for able students below the top 5 or even 10 per cent. In fact, in the United States over a period of about 20 years, the increase of $ 110 million in scholarship money has been accompanied by one of $ 1.3 billion in tuition fees — part of which is due to increased enrolment, but part the result of a policy of raising tuition fees and offsetting the rise by giving more scholarships. In other words, IHL use scholarships as a means of introducing or extending discriminatory pricing, that is, fees can be raised more easily if more and bigger scholarships alleviate the burden for the best students. Experts in the economics of education field, e.g. John Morse and John Stalnaker, have drawn attention to the unfortunate effect of a system which gives help to the top 5 or 10 per cent of the students but makes the lot of the remainder more difficult.

vi) The objection to scholarships for geographical reasons (it being assumed that the better students will be encouraged to move to the more attractive educational centres) — the mild enthusiasm of the Federal Government towards a scholarship programme — is explained by the opposition of Southern and Western interests to scholarships that attract their talented youth to IHL in the Northeast and which tend to keep them there. To project themselves, the South and the West favour either no federal scholarships, or maximum stipends of $ 800, an amount that would greatly reduce the incentive to go to high-cost IHL in the Northeast.

Public IHL in the West and South tend to oppose scholarship programmes because they make it possible to raise tuition fees and deprive these institutions of one of their great competitive advantages, namely, low or no tuition fees.

Table 20 gives different estimates of scholarship needs based[1], for example, on the amount required to keep students who are now being lost, giving the same amount of aid to the whole nation as is now being given by the 23 IHL giving the largest amounts. Monro would give each student $ 500. A proposal made by some authorities is $ 800 to every student in need, the cost being roughly equal to $ 500 for every student. It will be recalled that earlier I showed that the application of the British system to the United States would cost roughly from $ 1 billion to $ 4 billion. Using another approach, I obtain a total of $ 1,500 million.

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[1] S.E. Harris, *op. cit.*, p. 205.

TABLE 20. ESTIMATES OF ANNUAL SCHOLARSHIP NEEDS, U.S.

1.	The President's Commission on Education beyond the High School . .	750[1]
2.	To save 50,000-100,000 able students now lost each year	400
3.	Item 2 plus aid for students in need now in college, not receiving help	600
4.	Monro's proposal, $ 500 for each student	2,000
5.	Application of scholarships on the basis of CSS formula under which allocation is according to need based on family income	900
6.	National scholarship funds allowing the same per capita amount to be paid throughout the country as is now paid by the 23 IHL granting the largest scholarships	600[2]
7.	Application of the British policy to the United States	1,500[3]
8.	Eisenhower administration proposals, 1958	16
9.	Kennedy proposals, 1961 (average five years)	30

1. Presumably largely non-Federal government.
2. Part-time students excluded.
3. Part-time students excluded, and allowing $ 500 per student for employment earnings.

In recent years, some states have been quite enthusiastic about financing scholarship aid. New Jersey, for example, even allows its students to use scholarship money outside the state, so that a student receiving a scholarship, of say $ 500, may go to Wisconsin and receive perhaps a further $ 1,000. Yet despite these possibilities of burdening others, the states are not disposed to encourage this kind of migration. They prefer to hold on to their talented students[1].

CONCLUSION

In Western Europe, the tendency is to help students more generously than in the United States, which is surprising in view of the latter's higher output and per capita income. The degree of generosity varies from country to country — the United Kingdom being the most helpful, with Sweden coming second — although the latter insists on repayment of a substantial part of the aid given. Aid in some countries, e.g. the Netherlands and France, is at about the same level as in the United States, but is very small in others, either because of the attitude towards government intervention (Switzerland, Germany) or lack of resources (Italy, Portugal).

Western Europe is certainly more disposed to help those who continue their education than the United States — the latter having a much higher proportion of its college-age population attending IHL. This means that the limited entry to higher education in Western Europe more than offsets the democratising influence of the greater aid given there. European aid depends more heavily on scholarships and less on loans and employment than does aid in the United States, where the attitute is that education is appreciated more if it has entailed some sacrifice. The result may well be a lower educational level.

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[1] Cf. J. Morse, *op. cit.*

In general, aid does not substantially increase enrolment ; where space is limited — as it is in most of Europe — it may affect the type of student. When it represents a substantial part of costs, affluent students tend to be displaced by more able, poorer ones. In most countries, however, the proportion of students receiving substantial aid is small, due partly to limited resources, partly to the excessively large grants made to attract the best students, and partly to the fact that the criteria used are frequently other than need or ability.

More important than either direct aid in the form of scholarships, loans, employment, or of indirect aid, e.g. prices for room and board, is that in the form of fees which are much below costs. In Western Europe, fees are low and are often subsidised by government.

In some European countries, and especially in the United Kingdom, costs per student are strikingly high both in absolute terms and in relation to per capita income, so that this type of subsidy is particularly costly. In the United States, where the financing of higher education is still mainly a private operation, public IHL seek government aid to keep down costs or to improve educational standards for the benefit of the student, but oppose direct student aid above a minimum level.

Where unit costs are high, the aid given to students tends to rise correspondingly. A comparison of costs per student, in the United Kingdom, France and the United States shows wide differences. Costs per student in higher education in relation to per capita GNP was 141 per cent in the United Kingdom and 51 per cent in the United States. Costs to students in relation to per capita income was : Great Britain 94 %, Germany 90 %, Denmark 72 %, Canada 70 %, United States 62 %.

Among the reasons for the high unit costs in the United Kingdom are : the low student/teacher ratio ; large faculties with expensive curricula, e.g. science, technology and medicine ; high salaries for professors, possibly reflecting the pressures of international competition, and the heavy costs of student aid. On the other hand, in relation to the United States, the proportion of professors is small in the United Kingdom, outlays on research are lower, enrolment is heavy in low-cost teacher-training colleges and general income levels are lower. In France, the low costs are due largely to a very high S/T ratio and to the absence of supplementary services.

This problem of heavy unit costs in the United Kingdom requires further investigation. I have not listed all the relevant factors. The survival of relatively large numbers of students until graduation means higher average costs, a larger number of small courses being required. On the other hand, apart from large research outlays in the United States, supplementary services are more important, e.g. health, athletics, alumni relations, luxurious buildings and heavy general overhead expenses.

Student aid is said to reduce attrition, which can be measured to some extent by comparing the number of those who enter IHL with the number of those who graduate. In the major European countries, almost all those eligible for admission to IHL, that is, those who do actually continue their studies, graduate. This is possible partly because the government provides the necessary financial aid and partly because the student is generally likely to come from a high-income class or from a family where the parent is a professional or business executive. For, although per capita or per family incomes are about 2 or 3 times as high in the United States as in Western Europe, if allowance is made for the fact that the proportion of college age population attending IHL is about seven times as high as in Western Europe, then the average Western European student may well come from a family with higher incomes than does the average American student.

In general, in both the United States and Western Europe, the parents are in the higher-echelon occupations, although the ratio of students with parents in the better occupations to those in the labouring classes is much higher in Western Europe than in the United States ; these ratios indicate a much higher degree of vertical mobility in the United States.

The fact that in the United States the proportion of eligible students who do not go to IHL is higher than in Western Europe is partly explained by the inadequacy of financial aid, due, to some extent, to the large numbers in IHL in the United States.

Chapter 13

STUDENT AID
Concepts, objectives and methods

by

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CONCEPTS

The very title of this paper (which was prescribed to the author) presents a conceptual problem. The word « Aid » may be regarded as representative of a bygone philosophy ; modern usage prefers such terms as « redistribution » or « pre-salary ». Aid smacks of helping the poor, the sick and the aged. It means that those who produce and who are able to help themselves and their children make a sacrifice in favour of others who are in need of support or assistance.

Historically, charity was perhaps the first « pure » concept or principle of student aid. It fitted into a time and a social system in which the education a person received depended primarily on the family into which he was born. Higher education was reserved mainly for members of well-to-do families. The consumers of higher education paid for it and could afford to do so. They paid all or most of the costs of universities by way of levies and fees and, of course, they financed the costs of student maintenance. The upper classes considered it good policy to finance, as a marginal enterprise, some scholarships for the noble poor and especially gifted members of the lower classes. Charity does not seek to change the social system, but only to ease, here and there, such hardships as the system may inflict on some individuals. Remnants of this concept of student aid as charity can be observed even today. Charity, motivated by a guilty conscience, pity or love, will probably always find instances where it is useful and appropriate.

The second « pure » concept is closely linked to the rise of the middle class in so far as it proclaimed the principle of providing equal opportunity. This, of course, was initially designed to bring about limited changes in the social system for the benefit of the middle class, but served to start a movement which was hostile to all forms of privilege. Education appeared as the principal instrument regulating social opportunity. For those demanding, and worthy of education, all obstacles of prejudice and lack of means should be removed. Such criteria as « demanding », « worthy », and « in need of material aid », were significant for the systems of aid developed on the basis of this principle in a certain phase of social history. But these criteria are not logical implications of the concept of equal opportunity, which can be applied in very different ways. The principle as such will continue to influence the development of aid and will be used to remove discriminations against the female sex, against racial, political and religious minorities, against certain types of education not recognised by the establishment. But in the course of time the more subtle meaning of the principle of equal opportunity may gain more attention. Since men are not equal, it is not just or fair to offer all of them the same education. Some need special opportunity to overcome various handicaps and to develop their talent to the full. Identical aid would not provide equal opportunity to the slow and the brilliant, the student from the working class and from the middle class. The principle of equality, therefore, may be developed further in order to fulfil its essential meaning.

In recent years economic thought has emerged as an important element in this discussion. It has drawn attention to the investment and consumption aspects and the opportunity costs of higher education. It has also brought into focus the problems of redistribution of income brought about by education and the manpower-producing function of higher learning.

If the costs of higher education are regarded as an investment paying high interest either to the individual or to society or to both, the argument about aid is bound to differ from the discussion centring on the principles of charity and right. Aid becomes *inter alia* a means of improving efficiency and therewith the cost/return relation. If the time given by the student to higher education is considered as income forgone and added to direct costs, aid may become a more marginal item in the total calculation of costs and returns, or the argument to increase aid may be strengthened. If higher education is seen not only as an investment but also as consumption *per se* and as producing a durable consumption good as well as capital, this again changes the discussion of aid. Immediate and long-term profits of the individual are stressed, as are the arguments for letting individuals bear a large part of the costs of their higher education. If the financing of higher education, and in particular that part of it called aid, is seen as a means for bringing about flexibility and change in the distribution of income and wealth, aid systems appear different from what they seemed to be when considered as philanthropy. The granting of aid which varies according to parental income may follow from this. Finally, if higher education has the function of producing adequate qualified manpower, aid may appear as an instrument to attract sufficient numbers of students and to direct them into the proper careers.

Economic thinking has brought to light many interesting new aspects and produced new instruments of aid to students but it has not provided a full conceptual framework which could serve to orient the practice of aid. It is, however, present in two such concepts to be outlined later.

The third « pure » concept is based on liberal economic principles. The financing of education appears as a private business proposition. Education may seem desirable as investment or for consumption. In any case it is purchased mainly for private profit and enjoyment, and privately financed institutions can best cater to these purposes. If people profit individually from their education, why should the public pay part or all of the costs. If some people have difficulty in financing these costs out of their available means, why not treat the aid they want like any other loan ? If credit institutions are reluctant to give loans for educational purposes, let the state guarantee such loans. Tax exemptions may be considered as they are with respect to other investments. The state should perhaps also control the quality of the programmes and examinations. But this should be the limit of state intervention. Market forces will take care of the necessary adjustments in the expansion and variety of education offered. The differences in costs will be reflected in different life-incomes. These incomes cannot be predicted with certainly, but this will train people to remain flexible and to maintain their investment through refresher courses, etc. The selective process will favour strong personalities who like to take a risk. They will finish their studies in optimum time. The true business spirit in the educational enterprise will see to it that a high degree of efficiency is maintained and that education makes its best possible contribution to over-all economic growth. To keep private interest engaged, to have free choice in consumption and strong incentives for efficiency — these are essential aims of the liberal system. Elements of this concept have a great influence on the current practice of student aid and are likely to come up in most discussions of it in the foreseeable future.

While the concept just outlined is centred on the predominance of private interest in education, the next « pure » concept to be described is centred on the interest of society and the service of society. Students are regarded as potential manpower allocated to institutions, where they will build up an important part of social capital : intellectual resources. In doing so, they are serving society in the same way as workers producing physical capital, teachers, social workers or artists. Consequently, all the educational facilities and services they can put to good use must be placed cost-free at their disposal and they must be paid wages like other workers of their age and of their degree of vocational development. Education, including maintenance, has to be financed fully out of public funds. This gives a high priority to measures securing efficiency of education. In contrast to the concept centred on the private interest, efficiency in this system has to be secured by careful central planning and rigorous state intervention in the selection and allocation of candidates for higher education. A student has all the means he needs as long as he obeys orders and performs satisfactorily. This concept, too, as a whole or in some of its elements has a strong effect on present-day systems of aid and is likely to influence their further development. Like the previously mentioned concept, it is very much impregnated by economic thinking and designed to deal with problems of big numbers of students in fully emancipated societies.

None of the « pure » concepts can in reality be applied as such without serious shortcomings : aid in the sense of charity belongs mainly to a world of the past, much as it may still be desirable in individual cases of hardship. Higher education has become too big, too costly and too important for society as a whole to be ruled by a principle that is not linked with a general concept of how to organise society. Aid which is structured solely to accord with the principle of guaranteeing equal opportunity tends to neglect the need for efficiency in general and for manpower planning in particular. Carried to extremes, this precept may lead to the granting of universal higher education, i.e., to all but a small minority who could not benefit from it. Many students would then perhaps have to occupy costly university places for an excessive period, and marginal returns in higher education would probably compare unfavourably with those to be expected in other fields of activity. Total expenditure on higher education would rise enormously, but would there be a commensurate increase in benefits also ? And would not an academic proletariat asking for public assistance be the consequence of such a policy of implementing equal opportunity ?

The concept of aid centred around private interest in its pure form seems also rather impractical and likely to offend against other vital principles, in particular the postulate of social justice. Teaching and research are strongly interlinked in higher education institutions. Should the student be asked to pay for all research in order to make these institutions self-supporting enterprises ? If not, is there a satisfactory way to separate the costs of teaching ? Even if this could be done, costs vary widely as between disciplines. Will such large disparities be sufficiently reflected in different life income ? Is not the life income influenced by market forces which cannot be foreseen and which would make it very risky for individual students to take heavy loans in order to finance their education ? What about the « negative dowry » of women students ? (The husband of a woman student or graduate whose loan had not been paid off might have to repay it out of his own earnings.) It seems probable that the application of such a concept would tend to reduce the number of students considerably and to exclude from higher education all those who have reason to dislike taking a big financial risk. This concept, assuming a dominance of individual interest and profit, seems in theory to lead to a high degree of social justice and freedom for the individual student in his choice of education. In reality this would not be so. Students from low-income families and female students would be at a disadvantage. Furthermore, the tendency to restrict numbers might conflict with the needs of economic and cultural development.

The antithesis of this concept, which denies the predominance of individual interest and profit and regards higher education as a service to society, is not likely to come into conflict with manpower needs and other economic desiderata. Provided that forecasts and planning machinery are good enough, the output of higher education can be harmonised with manpower needs. And there are enough instruments to secure the efficiency of individual performance in such a system. Equality of rights can be guaranteed. Individual freedom, however, is by definition very limited, in particular the free choice of vocation. The so-called social demand for opportunities for higher education has little importance. This concept can take little account of the demand for higher education as a consumption good, because it would mean making allowance for certain possibilities of free choice within a fixed curriculum and for the chance to enjoy leisure. This would disturb the planned efficiency and would tend to introduce an element of individual payment for individual consumption. The main disadvantage of the extreme socialistic system may be its bias in acting against creativeness.

Because of their shortcomings outlined above, none of the pure concepts is in reality applied rigorously. A mixture of principles with the addition of some other less pure, but practical intentions characterises the actual aid systems in most countries. The pure concepts have emerged one after the other, or against each other, and have had to struggle with the power of traditions and vested interests. Awareness of the principles, however, helps in understanding the complex, real aid systems and in seeing the alternatives for further policy. Proposed aid programme should be studied, against the background outlined above, to ascertain their conceptual origins and their probable consequences in practice.

It should be borne in mind, furthermore, that any particular measure of aid in a given country can be understood in its real importance only if it is seen in the context of the whole national system of selecting for and financing higher education. What is called normal public support of education in one country may be called aid in another country. Aid may be found necessary in highly developed countries for students above the age of 16 or 17, because only then do opportunity costs begin to become important. In less-developed countries the problem of opportunity costs may arise as early as the age of 12. In the economically fully developed countries the aim of lifting the general level of education and of equalising opportunities may play an important role in the policy of aid to students in higher education, whereas in the poorer countries the sole intention may be to produce at all costs, as fast as possible, the highly qualified manpower needed for the beginnings of industrialisation.

As for concepts of aid in general, and their application in practice, the author comes to the same conclusion as did the team which recently investigated aid systems of some fifty countries at the request of Frank Bowles[1]. « Few countries have decided what their aid systems should achieve. »

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[1] *Direct Aid to Students,* The Economist Intelligence Unit, Limited, May 1962, page 41. (mimeographed). See also Frank Bowles, *Access to Higher Education,* Volume I, Appendix C, page 207, UNESCO and the International Association of Universities, Paris, 1963.

DEFINITIONS

The term student aid in its original meaning presupposes a system of financing education where as a rule some part of the educational costs has to be borne by the student or his relatives. Aid, then, is the financing of some fraction of these educational costs which, generally speaking, are borne privately.

By this definition the term aid should not be used in cases where no student pays individually for his education, even if by tradition there still exists a special budget under that heading from which all the costs of education not borne by other budgets are financed. Aid pushed to this extreme so changes its character that it can be said to have ceased to exist. This is the case in communist countries, where the state sees itself as an entrepreneur producing skills and knowledge in various kinds of educational plants under its direction. The state as employer selects students as apprentices and workers in these plants and pays them wages according to age and performance. No need for aid then remains.

Nor is there a place for aid in the private market sector of education existing in many countries. The student buys the services of self-supporting educational institutions in his own interest, paying the full price and foregoing income without receiving any immediate compensation. He or his parents may be allowed to offset the costs of this education in their income tax returns. Tax-exemption, however, has so far rarely been counted as student aid. It seems an open question whether it should be included in future accounts of aid.

Aid, then, seems to be a typical measure of financing education employed by systems which are situated between the two extremes mentioned above, and where a strong interest of both society and the individual student in the benefits of the « production of knowledge » is recognised.

In these systems, educational institutions are more or less subsidised by the state or private bodies and part of the maintenance costs of students is financed from the same sources. The remaining educational costs, however, are supposed, in principle, to be financed from the student's or his relatives' own means. Aid is given to alleviate the burden of financing these remaining costs.

The following definition, more explicit than the first given above, endeavours to cover a large number of typical aid measures in respect of the system just outlined.

The purpose of aid is to relieve students who are attending certain institutions and are above a certain age, or who belong to certain income groups, of a part of the costs of their education not financed from other sources. This may seem useful for one or more of the following purposes :

a) to increase the supply of qualified manpower so as to further economic growth ;
b) to raise the general level of culture ;
c) to provide equal opportunities ;
d) to ensure the efficiency of learning.

Aid may mean freeing, completely or partly, all or some students from the necessity to pay from their own or their families' resources for :

- *a)* the cost of using an educational institution ;
- *b)* the cost of study materials ;
- *c)* the cost of maintenance (e.g., good housing, transport, health).

It may also mean reimbursing students for income forgone. In this case they may get a kind of pre-salary enabling them to finance the costs of maintenance and leaving them a margin of available income.

Still more specifically a distinction can be made between direct and indirect aid :

> *Direct aid* means the handing out of money to individual students attending certain institutions, in the form of scholarships, grants, bursaries, loans. This definition may be narrowed by considering awards from public sources only. It may be widened by taking into account the direct grant to individuals of benefits in kind or of price reductions.
>
> *Indirect aid* means benefits offered generally to all students of certain institutions, that is, aid not handed out specifically to individuals and therefore not imposing an extra administrative effort. Indirect aid is, as a rule, given in kind and from public sources only.

AIMS AND METHODS

The way aid is given may be chosen with a view to achieve one or several of the following aims :

- *a)* to distribute the costs of education according to the distribution of benefits to be expected from education ;
- *b)* to equalise opportunities between relatively rich and relatively poor people, between small and large families ;
- *c)* to equalise opportunities between relatively poor and relatively rich regions ;
- *d)* to strengthen the power of central agencies, or to decentralise ;
- *e)* to regulate the inflow into certain institutions, disciplines and careers (sluice-function) ;
- *f)* to provide incentives for efficiency in learning and to optimise returns on all resources invested ;
- *g)* to provide optimum conditions enabling students to concentrate on learning, to enjoy good health and be free of material worries ;
- *h)* to give the student freedom to choose the institution of learning he prefers ;
- *i)* to keep administrative machinery as small as possible.

How best to share the costs of education between families and individual receivers of benefits, on the one hand, and society represented by various agencies, on the other, seems to be a permanent problem. The answers differ depending on whether the main objective is redistribution for social or moral reasons, economic growth, one of the other aims enumerated above, or an optimum combination of all these aims.

We can leave aside the two pure concepts based on the assumption of a clear predominance of the interest either of the individual or of society. There is enough circumstantial evidence to show that these assumptions have the value of a dogma but are far from conforming with the facts. We proceed on the assumption that both individuals and society profit greatly from education. At the present stage of research, however, we have no method permitting us to attribute with a fair degree of exactness the benefits of education in general or of specific educational careers as between individuals and society. We shall perhaps never be able to make calculations of this kind. Since the causal relation between specific educational costs and specific benefits is unknown, we cannot make it the basis of sharing the costs between individuals and society.

Society has taken over the costs of compulsory education and, throughout the world, is paying an increasing proportion of the costs of voluntary secondary and higher education. But this has been happening for a number of reasons, of which the argument of economic benefit was rarely predominant. As education at the upper levels expands, opportunity costs increase as a proportion of the total sum of costs, and the economic problem of how to distribute total costs at these upper levels becomes more urgent.

It is argued that high differentials in life incomes result from different educational inputs and that individuals so benefiting should therefore bear a high proportion of the cost[1]. Against this it is stated that society as a whole draws greater benefit from prolonged education than do individual graduates. Society, therefore, should bear the greatest share of the costs.

Since there is no hope of getting quantified proof for one or the other argument in the foreseeable future, decision-makers must fall back on other lines of reasoning. One might argue that there are many advantages in providing education at all levels almost cost-free and compensating in part for income forgone. This certainly attracts more talent into higher learning, gives more scope for the selection of the best candidates, ensures concentration on learning without material worries, provides a rich inflow of qualified manpower into the labour market and thereby brings about high rates of economic growth.

This also has the advantage of keeping administrative machinery small, since differentiation in prices and discrimination according to need and merit cause extra administrative efforts. If all students, once they are admitted, were to receive all goods and services connected with education cost-free, hardly any special aid agency or department would be needed.

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[1] « The student gains, and hence he should pay a substantial part of total costs. My estimate is that the lifetime differential for a *college graduate of 1960* should be about $ 200,000 — this is subject to some reservations. A precise valuation of social versus private gains is not possible. » S.E. Harris, *Higher Education Resources and Finance*, New York, 1962, page xxv.

In order to introduce an element of consumer choice, it is possible to give the student the equivalent of part of these goods and services in money. He can then buy according to his individual needs and tastes. Aid is needed only for the pocket money enabling poor students to buy such goods and services as the general allowance does not provide for.

But in most countries at present aid has a wider field. Even the educational goods and services are rarely offered cost-free (except in communist countries, Scandinavia, and some developing countries). But they are, as a rule, offered at very much reduced prices[1]. Only small proportions of the costs are usually covered by fees. Hostels, dormitories, cafeterias etc. are also mostly subsidised to some degree.

This system of offering education at reduced prices and subsidising maintenance costs is only partly the result of tradition, the need to save money and the wish to differentiate. Traditionally, students in higher education came from well-to-do families who could afford to bear a large part of the costs. Traditionally, the work a student does is not considered work in the proper sense. It is regarded mostly as consumption. Traditionally, therefore, the idea of equal pay for equal work seemed to be completely out of place in connection with the problem of how to finance educational costs. On the contrary, differentiation in granting support and reduced prices to students seemed indicated for reasons of social justice. To make such differentiation possible between rich and poor, between worthy and less-worthy students, it is necessary to make the proportion of educational goods and services offered cost-free very small and to all students equally.

Against this it can be argued that even a student from a rich home should become financially independent of his parents as he grows up, at the latest once he is of age. A system of equal pay, that is, some sort of pre-salary is for educational and psychological reasons recommended. It is argued furthermore that the social advantages a student from a rich family normally possesses count more than the additional small advantage he can gain from a pre-salary. To this it is added that all advantages a student may have in .terms of opportunity to earn a large lifetime income can be equalised or socialised to much better effect by progressive taxation than by differentiation in aid.

The same argument is used against the proposals to give aid wholly or partly in the form of loans. It is stressed, furthermore, that loan schemes are likely to discourage talented young people, particularly women, because they dislike starting their working life or marriage with a big debt.

On the other hand, partisans of loan schemes argue that aid in this form provides strong incentives to young people to make the best of their student years. To add to this encouragement the debt is often reduced if the student remains in a given occupation a fixed number of years after graduation.

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[1] « Tuition should not be based on costs. But variations in charges to some extent reflect costs — e.g., medicine, and where public and private gifts are not available. One curriculum costs more than fifty times that of another in one university ; but charges vary little. » Harris *op. cit.*, page xxii.

If there is a wide margin of total costs left to be financed privately, aid can be used as a powerful instrument to direct students towards certain careers or to induce them to perform well. They will receive aid only if they meet certain criteria of worthiness, if they are in the first line of academic achievements and/or are willing to choose a career in which a shortage is imminent. Tax exemption for educational costs is also sometimes used as an instrument of manpower policies. To tie students to certain careers by financial assistance is also fairly typical of cost-free systems of education. In these cases, admission will be linked with a contract obliging the student to take up certain tasks in specific occupations after graduation. Such measures are typical of developing countries or big corporations and public bodies running their own systems of education.

To regulate the inflow into all institutions of higher education by granting or refusing aid is a modern objective. In the past the aim was rather to concentrate aid on certain institutions belonging to the economic establishment. More and more institutions of learning are covered by aid programmes. Differentiations between the standards of aid administered in various institutions continue, but it becomes increasingly difficult to draw the line between academic and non-academic education with a view to excluding the latter from measures of aid. There is an increasing tendency for students of vocational schools and upper secondary schools in general to receive not only cost-free education but also some compensation for income forgone. Definitions, practices and amounts of aid given per student still vary considerably between the various kinds of institutions and levels of education. In general, however, there seems to be a growing trend towards more uniform standards, differentiating more according to age than with respect to purpose or level of institution.

To have aid financed by a plurality of sources is generally regarded as an advantage because it is believed to increase the total volume of assistance. Many agencies providing aid also take part in decisions on distribution. This too is frequently regarded as an advantage because these agencies are often in closer contact with the recipient and better able to observe the effects of the different types of aid. A more central aid organisation is recommended mainly because it helps avoid overlapping and duplication of sources of aid. It also facilitates the provision of reliable statistical surveys.

Central aid budgets can help considerably to equalise educational opportunities as between people in relatively rich and relatively poor regions. Progressive income taxes collected from various regions are redistributed *inter alia* as student aid, thus increasing the opportunities for education in regions where opportunity is normally relatively low.

In order to equalise opportunities between people living at varying distances from educational institutions, aid can be differentiated with similar effect. In the Swedish system, for instance, students living in communities where they have no adequate educational institutions receive aid above the normal amount to enable them to commute to other localities. If they have to travel very far for this purpose, they will receive still more aid to help defray the cost of rooms and board. Such a system of differentiation seems very conducive to the development of the reserves of talent to be found in rural areas.

In surveying the various national systems of aid, the author of the present paper has formed the opinion that it may be dangerous to try to achieve too many objectives with the one relatively small instrument of aid policy. The system may become too complicated and the advantages sought may even cancel each other out.

As a rule, poor countries cannot afford to strive for several objectives at once with their aid system. If, for instance, they try to equalise opportunities and at the same time to produce urgently needed skilled manpower, they may achieve neither goal. Richer countries can hope to organise their aid system so as to achieve simultaneously many of the purposes listed above. But even rich countries can go too far along this path.

In the industrially advanced countries, it might be wise, in choosing the type of aid programme, to give first priority to those criteria which seem likely to result in the attraction of the greatest number of gifted students, and to provide all students admitted with the best possible conditions for learning. The saving of money may be of minor importance in this connection, because so much more depends on the results of education than on finding the most economical way to administer aid. Social justice may also be considered a secondary purpose. Social justice is a broad aim and very difficult to achieve. Aid systems can fail in their most important task if they give too high a priority to the summit of justice — a goal which can be achieved in many ways outside the system of aid.

But these are the personal thoughts of the author. As was noted in the first part of this paper, aid systems depend very much on the philosophy behind them. There have been no studies aimed at comparing the relative economic merits of various systems. It would seem that the time has now come to test and verify some of the hypotheses which are commonly made in discussions of student aid.

⁂

ACKNOWLEDGEMENTS

Seymour E. Harris and Frank Bowles were of great help to me through their publications and personal advice.

Dr. Marianne von Rundstedt has assembled most of the facts contained in the appendix. She has just published a study on the system of student aid in the Federal Republic of Germany *(Die Studienförderung in der Bundesrepublik Deutschland in den Jahren 1950 bis 1960,* mimeographed. Deutsches Institut für Internationale Pädagogische Forschung, Frankfurt/M., Schlossstr. 29.)

Dr. von Rundstedt intends to continue her work on comparative international aid systems during the coming years at the Max-Planck Institute for Education Research, Berlin.

Appendix

TABLE I. DIRECT GRANTS TO STUDENTS AS PROPORTION OF RECURRENT EXPENDITURES ON HIGHER EDUCATION — 1960

		WEST GERMANY	GREAT BRITAIN	FRANCE
I.	Total recurrent expenditure on higher education	DM 806,343,000	£ 196,000,000	n.a.
II.	Direct grants to students	DM 103,800,000	£ 28,200,000[1]	n.a.
III.	Direct grants to students as percentage of total recurrent expenditure on higher education (II as a percentage of I)	12.9	14.4	n.a.
IV.	Public recurrent expenditure on higher education	DM 689,845,000	£ 114,800,000	NF 551,570,000[2]
V.	Direct grants to students	DM 103,800,000	£ 27,100,000[3]	NF 87,260,000
VI.	Direct grants to students as a percentage of public recurrent expenditure on higher education (V as a percentage of IV)	15.0	23.6	15.8
VII.	Total expenditure on direct grants to students as a percentage of total student maintenance costs[4]	16	53	16
VIII.	Students receiving direct grants as a percentage of all students	33[5]	79[6]	21[7]

[1] In all post-secondary school education.

[2] Expenditure of Ministry of National Education, excluding pensions, budgetary credits for salary increases, subsidies of private IHL.

[3] In higher education.

[4] Comparisons are based on estimates of unit maintenance costs, the total number of students and the number of students receiving grants.

[5] Grants from public funds.

[6] In 1957-58.

[7] Grants from National Ministry of Education.

TABLE II. PORTION OF FEES FINANCED BY PUBLIC FUNDS — WEST-GERMANY — 1960

	DM (millions).
Total amount of fees	64.1
Amount remitted	10.4
Percentage remitted	16.2 %
Amount paid out of other public funds	9.0
Percentage paid out of other public funds	14.1 %
Total from public funds	19.4
Total percentage from public funds	30.3 %

TABLE III. PORTION OF FEES FINANCED BY PUBLIC FUNDS — GREAT BRITAIN — 1960

	£ (millions).
Total amount of fees	10.6
Amount paid from awards by central and local government	7.4
Percentage paid from awards by central and local government	69.8 %

Tables I, II and III summarise part of the results of a more comprehensive study. Additional material, as well as more detailed definitions, may be had upon request. The comparisons between West Germany, Great Britain and France made in these tables must be considered tentative in view of the inadequacies of statistics in this field and the difficulty of obtaining international comparability.

GERMANY

TABLE IV. PUBLIC EXPENDITURE[1] ON DIRECT AID TO STUDENTS 1953-1960

YEAR	EXPENDITURE ON GENERAL AID[2] IN CURRENT PRICES	EXPENDITURE ON «KATEGORIALFORDERUNG»[3] IN CURRENT PRICES	TOTAL EXPENDITURE ON AID[4] IN CURRENT PRICES	NUMBER OF STUDENTS	AMOUNT OF AID PER STUDENT	
					IN CURRENT PRICES	IN 1960 PRICES
	1,000 DM				DM	
1953	10,935	18,267	30,202	134,165	225	256
1954	10,601	21,743	33,645	140,077	240	273
1955	11,491	23,502	36,593	148,092	247	276
1956	12,838	27,498	42,736	159,332	268	292
1957	30,689[5]	29,413	64,002	174,469	367	392
1958	48,314[5]	36,619	89,783	190,258	472	487
1959	57,029[5]	41,735	104,731	209,008	501	509
1960	54,020[5]	42,642	103,840[6]	229,968	452	452

1. Partly estimated.
2. Without fees remitted.
3. The major components of « Kategorialförderung » are the educational awards under the « equalisation of burdens » fund and awards for war victims.
4. Including aid to highly gifted students from special semi-public funds.
5. Including aid to students at the university of Saarland.
6. Including aid to students at teacher training institutes in Saarland.

Source : M.v. Rundstedt, opt. cit., page 101.

FRANCE

TABLE V. DIRECT AID TO STUDENTS IN HIGHER EDUCATION 1950-1962

YEAR[1]	DIRECT AID CURRENT PRICES 1,000 NF	NUMBER OF STUDENTS[4]	AMOUNT OF AID PER STUDENT				STUDENTS RECEIVING AID AS PERCENTAGE OF ALL STUDENTS
			CURRENT PRICES NF	1950 = 100	PRICES OF 1960 NF	1950 = 100	
1950	7,047[2]	122,291[5]	58	100	101	100	.
1952	26,479[2]	126,821[5]	209	362	279	277	.
1954	31,270[2]	135,136[5]	231	402	313	312	.
1955	43,427[3]	168,127[6]	258	448	346	344	16.4
1957	47,495[3]	184,498[6]	257	447	326	324	16.6
1959	75,506[3]	206,037[6]	366	636	380	377	20.3
1960	87,260[3]	218,062[6]	400	694	400	398	21.3
1961	101,261[3]	244,037[6]	452	784	438	435	21.6
1962	107,850[3]	252,135[6]	428	742	395	392	21.5

1. Financial year 1st January to 31st December ; school year 1st October to 30th September.
2. To University students only.
3. To University and Higher Technical Education students, including preparatory year for Colleges of Advanced Technology (Grandes écoles).
4. Foreign students are in general excluded. Algerian students included until 1960.
5. University students (excluding double registration).
6. University and Higher Technical Education students.

Sources : Ministère de l'Education nationale - *L'Education Nationale,* Supplément Administratif 1960. 5, page 415, and 1960, 19, page 1. - Informations Statistiques. - Annexe Statistique au Feuillet Documentaire. - Receuil de Statistiques Scolaires et Professionnelles 1949 - 1950 - 1951.

FRANCE

TABLE VI. INDIRECT AID TO STUDENTS IN INSTITUTIONS OF HIGHER LEARNING (IHL)[1] 1955-1963

YEAR	TOTAL AMOUNT OF SUBSIDIES FOR UNIVERSITY RESTAURANTS	AMOUNT OF SUBSIDIES PER NORMAL MEAL	STUDENT'S PRICE PER NORMAL MEAL	AMOUNT OF SUBSIDY PER STUDENT[2]	NUMBER OF PLACES IN HOSTELS	PERCENTAGE OF ALL STUDENTS WHO LIVE IN HOSTELS[3]	NUMBER OF PLACES IN UNIVERSITY RESTAURANTS	PERCENTAGE OF ALL STUDENTS WHO EAT IN UNIVERSITY RESTAURANTS[4]
	1,000 NF	NF						
1955	10,722	0.66	0.75	61	13,100	8.4	20,000	34.3
1956	12,248	.	.	69	13,900	8.8	21,500	36.3
1957	13,970	.	.	73	14,870	8.7	23,200	36.2
1958	17,066	.	.	83	15,800	8.7	24,300	35.7
1959	20,531	1.00	1.00	94	17,100	8.9	25,800	35.3
1960	27,409	1.00	1.00	118	18,300	9.1	28,490	36.7
1961	32,710	1.10	1.10	138	21,400	10.5	32,000	40.6
1962	36,660	1.10	1.10	137	22,400	9.6	33,500	37.4
1963	41,860	1.20	1.20	.	25,045	.	35,928	.

1. Under the authority of the « Ministère de l'Education Nationale ».
2. Students of Universities and Higher Technical Institutions including foreigners.
3. University students including foreigners.
4. Calculated on the basis of three meals per day per place.

Sources : Statements of Centre National des Oeuvres Universitaires et Scolaires ; Education Nationale 1959, No. 33, page 27.

D

STATE AND LOCAL FINANCING

14

FINANCING SECONDARY SCHOOL EXPANSION

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15

LOCAL AND CENTRAL GOVERNMENT PROBLEMS IN THE FINANCING OF EDUCATION

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Chapter 14

FINANCING SECONDARY SCHOOL EXPANSION

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This paper is concerned with two major questions : (1) the tax consequences of expanding secondary education, and (2) the educational programme consequences of alternative patterns of financing secondary schools.

Secondary school financing is selected for discussion because the decisions reached on expanding these enrolments and improving quality will largely determine the capability of education in the OECD countries to contribute to economic expansion. Access to secondary education is a step toward broadening university enrolments. It is essential to the provision of technical and ancillary personnel for an expanding technology and a quickening of scientific research, and to facilitate the structural economic changes involved in the movement of the labour force from agriculture to industry, and of the population from farm to city.

A measure of the expansion in secondary schooling is suggested by the projections, shown in Table 1, of the change in the proportion of the current educational budget proposed for 1975.

Table 1. PUBLIC EXPENDITURE ON SECONDARY SCHOOLS AS PERCENTAGE OF TOTAL

COUNTRY	1960	1975
Greece	34.7	45.1
Italy	41.9	66.9
Portugal	37.8	44.0
Spain	41.0	52.8
Turkey	36.9	42.7
Yugoslavia	25.3	28.4

Source : « The Mediterranean Regional Project », *The OECD Observer*, February 1964, pp. 20-21.

TAX CONSEQUENCES OF SCHOOL EXPANSION

Educational expenditures in many Member countries are projected to rise rapidly in the decade or so ahead. The rate of increase in educational expenditure is often compared with the rate of growth of GNP[1]. Such comparisons are used in at least two different ways. First, a more rapid rise in educational outlays than in GNP indicates that a larger share of total resources are to be allocated to educational facilities and services in the future than at present. Second, they are used to suggest tax consequences of the educational decisions. A growth in educational outlays proportionate to GNP is assumed to require no change in revenue structure. It is in the context of this second use of such educational budget/GNP comparisons that one needs to ask : how do tax collections respond to economic growth ? Is the revenue structure in a country of such a nature as to produce additional tax funds proportionate to the rise in GNP, or more or less than proportionate ; for example, is a 1 per cent rise in GNP associated with a 1 per cent rise in revenues ?

While the primary policy problem undoubtedly is the relative share of resources of men and materials to be allocated to education, and the part of this share to be devoted to secondary schooling, the relevant financial issue is whether the expanded educational budget require : *(a)* a change in tax rates, or *(b)* new taxes ? For this purpose we need some measures of GNP or of the income elasticity of the revenues used to finance secondary schools, and comparison of this elasticity with the projected growth in the share of GNP to be claimed by secondary education. Only by such a ratio can it be determined whether a given educational policy necessitates an alteration in budget allocations among classes of public expenditures, or a change in base or rate of taxation.

To my knowledge there are no major studies of the GNP elasticity of the tax systems of the European countries that at least permit description of the historical performance of revenues in response to the recent rapid economic development. In the absence of such a scientific study of the past, it is not possible to build a framework for anticipating the expected performance in the period ahead. This financial question is raised essentially to stimulate the necessary investigation of the income elasticities of the revenue structure.

Measurement of the income elasticities of revenues serves far broader purposes than assessment of the tax consequences of expanding opportunities for education. General fiscal policy depends upon a knowledge of the built-in flexibility of the tax system, that is of the tax system's responses to economic change, and of the influence of tax collections on aggregate demand.

As a consequence of the large share of national taxes assessed on personal and corporate income and the sensitivity of these taxes to levels of income and profits, much research has been done in the

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[1] Svennilson, Edding and Elvin ; *Targets for Education in Europe in 1970*, Policy Conference on Economic Growth and Investment in Education, Volume II, OECD, Paris, 1962.

United States on the question of the sensitivity of taxes to economic change[1,2]. The national revenue system acts as a brake on a decline in income, but the automatic tax stabilizers also check expansion when incomes are rising even though the economy may be operating below its full capacity. The recent reduction in Federal tax rates was designed to increase general demand and reduce the tax impact on economic growth.

The basic structure of a nation's tax system determines how a tax system responds to changes in economic activity. In general, tax systems that rely heavily on taxation profits and on progressive income taxes will produce revenue increases proportionately larger than the growth in GNP. By way of contrast, a tax system that relies on flat per capita levies or specific levies on inelastic consumption items such as tobacco will produce revenue changes which may be considerably less than indicated by the change in GNP.

Tax structures of the different nations show a wide variation in their mix of direct and indirect taxes. A recent study by Otto Eckstein summarises the proportion of direct taxes in the total tax structure of selected countries[3].

TABLE 2. DIRECT TAXES
INCLUDING EMPLOYEE SOCIAL SECURITY CONTRIBUTIONS

COUNTRY	AS PER CENT OF ALL TAXES	AS PER CENT OF GNP
France	27	9
Germany	44	15
Italy	27	8
United Kingdom	46	13
United States	57	16

Whereas in the United States, the United Kingdom, Germany, and the Scandinavian countries, direct taxes account for nearly half of all taxes, in France and Italy indirect tax levies predominate. Indirect taxes, in turn, are of several kinds. In Italy they are mainly turnover taxes levied consecutively on the value of sales at each stage of the production and distribution process. Turnover taxes are levied as well in Germany, Belgium, and the Netherlands. The primary revenue source for France is its value added tax. Sweden in 1960 introduced a retail sales tax similar to the sales taxes used

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[1] Pechman, Joseph A., « Yield of the Individual Income Tax During a Recession ». Conference of the Universities-National Bureau Committee for Economic Research, published in *Policies to Combat Depression*, a report of the National Bureau of Economic Research, Princeton University Press, Princeton, 1956, pp. 123-148.

[2] Brown, E. Casy and Kruizenga, R. J., « Income Sensitivity of a Simple Personal Income Tax », *Review of Economics and Statistics*, August, 1959.

[3] Eckstein, Otto (assisted by Tanzi, Vito), « Comparison of European and United States Tax Structures and Growth Implications », published in *The Role of Direct and Indirect Taxes in the Federal Revenue System*; a conference report of the National Bureau of Economic Research and the Brookings Institution, Princeton University Press, Princeton, 1964, pp. 217-293.

by many states within the United States as the primary source of their tax revenues.

The GNP elasticity of a tax structure depends upon a large number of factors, including the following :

1. the overall composition of the tax structure, that is, whether the taxes are imposed primarily on personal income, profits, sales, property, and so forth ;
2. the distribution of tax collections by specific source of tax ;
3. the relative importance of *ad valorem* and specific taxes in the tax structure and the income elasticity of consumption items subject to taxation ;
4. the definitions of tax bases such as personal exemption levels, type of income, and sales excluded from each specific tax base, statutory ceilings on taxable amounts ;
5. the rate structure and the shifts in rates from one tax bracket to the next for those taxes that have a graduated rate schedule ;
6. taxpayer compliance with various types of taxes ;
7. administrative features of the tax law, such as self-assessment or agency-assessment of taxes, lags in reassessment, frequency of tax reporting and collection ;
8. the responsiveness of each of the tax bases to change in national product and income.

To arrive at a measure of the income elasticity of a tax system, each of the major taxes has to be considered separately, and all factors affecting revenue yield have to be isolated so as to exclude factors other than the automatic responsiveness of the tax base. There are several possible methods of measuring the sensitivity of a tax. First, the marginal rate of tax can be estimated for a defined standard base[1]. Second, the change in tax yield for a defined standard rate structure can be measured under given income conditions. Third, the change in the base value of a uniformly defined tax base can be quantified.

Essential to all these different approaches is the uniformly defined tax base. Accordingly, in using historic data on taxable values or tax yields, it is necessary to correct for changes in tax law, administration, and compliance, and — where yield data are applied — for changes in tax rates as well. For purposes of this paper, I have done none of these things and the figures shown in Table 3 are intended only to incite research.

The crude tax data published by the United Nations for national economic accounting purposes are used. The 1961 tax collections are computed as a per cent of 1955 collections, and this percentage in turn is divided by the percentage increase in GNP between 1955 and 1961. Again, I emphasise, no account is taken of changes in tax law, although substantial changes have been made. No adjustment has been introduced for lags between income and tax assessment, and for differences in these lags from nation to nation. Data for only two years are reflected and peculiarities in either year affect the figures.

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[1] Prest, A. R., « The Sensitivity of the Yield of Personal Income Tax in the United Kingdom », *The Economic Journal*, No. 287, September, 1962, pp. 576-596.

The uniformity in the ratios is the surprise in this computation. If, during this period, tax reduction was fairly common in Europe as part of fiscal programmes to maintain demand and accelerate investment, as has been reported, then it may be concluded that tax revenues generally rise faster than gross national product and by very significant percentages. When this conclusion is coupled with data on taxes as a per cent of GNP, it seems clear that economic growth can provide substantial resources for expansion of the educational programmes.

TABLE 3. RATIO OF PER CENT CHANGE IN SELECTED TAX COLLECTIONS TO PER CENT CHANGE IN GNP, 1955 TO 1961

<table>
<tr><th rowspan="2">COUNTRY</th><th rowspan="2">INDIRECT TAXES</th><th colspan="2">DIRECT TAXES</th><th rowspan="2">DIRECT & IN-DIRECT TAXES COMBIN-ED</th></tr>
<tr><th>ON CORPOR-ATIONS</th><th>ON INDIV-IDUALS</th></tr>
<tr><td>Austria</td><td>1.1</td><td>1.3</td><td>1.1</td><td>1.1</td></tr>
<tr><td>Belgium</td><td>1.1</td><td>1.1</td><td>1.2</td><td>1.1</td></tr>
<tr><td>Canada</td><td>1.1</td><td>1.1</td><td>1.2</td><td>1.1</td></tr>
<tr><td>Denmark</td><td>1.1</td><td>0.8</td><td>1.0</td><td>1.0</td></tr>
<tr><td>France</td><td>1.0</td><td>1.3</td><td>1.2</td><td>1.1</td></tr>
<tr><td>Germany</td><td>1.0</td><td>1.1</td><td>1.2</td><td>1.1</td></tr>
<tr><td>Greece</td><td>1.1</td><td>0.8</td><td>1.0</td><td>1.0</td></tr>
<tr><td>Ireland</td><td>1.1</td><td>0.8</td><td>1.1</td><td>1.1</td></tr>
<tr><td>Italy</td><td>1.0</td><td colspan="2">1.2</td><td>1.1</td></tr>
<tr><td>Netherlands</td><td>0.9</td><td>1.0</td><td>1.5</td><td>1.2</td></tr>
<tr><td>Norway</td><td>1.1</td><td colspan="2">1.2</td><td>1.1</td></tr>
<tr><td>Portugal</td><td>1.1</td><td>1.0</td><td>1.1</td><td>1.1</td></tr>
<tr><td>Spain</td><td>1.2</td><td>1.1</td><td>1.4</td><td>1.2</td></tr>
<tr><td>Sweden</td><td>1.3</td><td>0.7</td><td>1.2</td><td>1.1</td></tr>
<tr><td>Switzerland</td><td>—</td><td>1.2</td><td>—</td><td>—</td></tr>
<tr><td>UK</td><td>1.0</td><td>—</td><td>1.2</td><td>1.0</td></tr>
<tr><td>USA</td><td>1.1</td><td>0.8</td><td>1.2</td><td>1.1</td></tr>
<tr><td>Yugoslavia</td><td>0.7</td><td>—</td><td>—</td><td>—</td></tr>
</table>

EDUCATIONAL PROGRAMMES AND PATTERNS OF SCHOOL FINANCE

New nations have a choice in method of organisation and financing of education denied to the « old world » bound by history and tradition. To help assess the issues involved in this choice we may ask : were we to divorce ourselves from the centuries of educational history in OECD countries, should we in principle establish an educational system in which both financing and administration are made the responsibility of the central government ? Or, should we look toward some degree of decentralisation in which financing and administration are not coterminous, and the central government assists the local communities in discharging their educational responsibilities ? A third possible course is wholly local administration and financing.

Rational choice of methods of organisation and financing would take account of a series of educational and public policy objectives. Among these objectives are : *(a)* regional uniformity in educational services ; *(b)* equity in educational opportunity ; *(c)* viability of the educational programme in a growing economy ; and *(d)* flexibility in operation.

The orthodox arguments

The orthodoxy suggests that a central system of educational fiscal support can be designed more efficiently than a decentralised one to achieve the objective of regional uniformity in educational expenditures and high quality of educational services. Regional differences in fiscal capacity, in location of school age populations, or in costs of educational services need be no barrier to the achievement of uniform levels of education everywhere in the nation. However, when local communities raise the funds to finance educational services, differences in their fiscal capacity and in budgetary requirements tend to result in regional variations in quantity or quality of educational services.

Governments may seek to meet the public service requirements in a more uniform way, either by direct transfer of responsibility to the national level, or by various types of aid through which the superior resources of the national government help to finance local public services. The types of national government aids are summarised in a subsequent section, but these aids fall short of the objective of perfect uniformity ; rather, a greater measure of uniformity is the goal set.

Geographic uniformity in the quantity and quality of education points to central administration and financing, and so, too, does greater equity in educational opportunities among social classes. Higher education and academic secondary school studies leading to the university have been largely the preserve of the offspring of the educated. Even today in a nation such as the United States, with its almost universal higher education and great occupational mobility, the demand for university places is highly correlated with the educational attainment of parents. In other nations of the OECD, findings on studies of the social demand for education point to the same conclusion. To equalise opportunities for education among social and economic groups, more than geographic uniformity in resources for education is needed. Communities in which there are large numbers in disadvantaged economic groups have to run harder to correct past neglect. Higher expenditures per child of school age are required to ferret out latent talent among the economic disadvantaged and to develop it. Thus, the communities with larger needs for educational resources, because of concentrations of children from poorer homes, are those most likely also to have relatively low fiscal capacity. On the national government falls an obligation not only to equalise educational expenditure loads geographically through fiscal aids, but also to provide that added measure of support required to achieve greater equity in schooling among economic and social classes.

Increasingly education, particularly at secondary and higher levels, is being viewed as an integral part of a general economic programme. It is to the educational institutions that we look for the development of manpower resources for economic growth. National economic objectives require assessment of the nation's manpower potential and concomitant training obligations, and of the means toward achieving the necessary skilled manpower in the appropriate numbers and calibre. The national government alone has the authority to define the manpower requirements of its economic programme ; and accordingly, it must take the initiative for implementation.

The objectives of uniformity and equity in educational opportunities, and of education as an instrument of economic policy, point to central administration and financing of education. The arguments advanced here follow orthodox concepts in the literature on centralisation and decentralisation in public finance.

This same orthodoxy suggests that a centralised system of financing and administration loses much of the flexibility of a decentralised system and of the experimentation that local initiative and direction permits. Peacock and Wiseman in another context have noted :

> ... the history of government activity in Britain is to an important degree a history of the evolution of services by individual local governments, the successful experiments later being taken up and generalised by legal action of the central government. The development of the present education and public health services, for example, owes a great deal to the initiative of pioneering local councils that stimulated the central government to encourage emulation elsewhere.[1]

In a sense, the OECD nations provide a laboratory to test these orthodox arguments. Are the gains in uniformity, in equity, and in adaptation of education to economic planning evident in the educational programmes of those OECD nations that have centrally administered and financed systems ? Are losses in flexibility and in experimentation associated with such gains ? Or, we may ask the obverse of these questions. Do systems in which financing and administration are a divided responsibility result in wide discrepancies in educational expenditure levels both geographically and among social classes ? Do these systems impair effective programming ? Are these decentralised systems more flexible, more experimental ?

What we are essentially seeking is information that bears on the policy problem ! Do decentralised systems of financing impair that expansion of secondary schooling required for effective economic growth ? Do the centralised systems facilitate the required expansion ?

Methods of Secondary School Finance

Within the Member nations of the OECD great variety exists in patterns of secondary school finance. These methods may be classified as follows :

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[1] Peacock, Alan T., and Wiseman, Jack, *The Growth of Public Expenditures in the United Kingdom*, London 1961, p. 99.

1. central budget financing out of general tax funds :
   - *a)* with some local participation,
   - *b)* without local financial participation ;
2. national government financial aids in the form of :
   - *a)* grants-in-aid,
   - *b)* tax sharing between national and local governments,
   - *c)* loans (direct or guaranteed) ;
3. local budgetary financing out of :
   - *a)* general revenues,
   - *b)* earmarked revenues,
   - *c)* intermunicipal cooperative purchase or grant, arrangements,
   - *d)* student fees.

The extremes in patterns of finance are suggested by the almost wholly national educational system of France and the almost wholly local programmes in Switzerland. In France, almost all public secondary schools are financed by the national government and are the property of the national government. Primary schools belong to local authorities but the financial obligation of the local authorities is limited to school plant maintenance costs, such as heating and janitorial services. While local authorities can negotiate with the Ministry of Education about a new high school and share in the construction costs, this is seldom done. Switzerland's 25 cantons determine educational policy and finance the schools without central government intervention.

Many of the Member nations have adopted intermediate systems that call for inter-governmental aid for financing school programmes. These inter-governmental aids are essentially tools through which some degree of local autonomy may be maintained, and at the same time the superior financial resources of the national government may be used in financing public services. The grants-in-aid arrangements are of many types and are applied often in combination with related aid or revenue-sharing programmes, so that patterns are intricate.

Variety in Federal Systems

Four of the OECD nations — Canada, Germany, the United States, and Yugoslavia — have federal systems of government and in each of these nations a high degree of local autonomy is maintained with very different inter-governmental financing arrangements.

Germany's « *Länder* » carry the responsibility for administering and financing the school system, within an overall system of tax sharing. Important tax sources are given to the *Länder*, and revenues are split between them and the central government. The present division of taxes among the three levels of public authority — central, *Länder*, and local — are shown in Table 4. The division of total tax resources in accordance with constitutional provisions results in the division of tax receipts among federal, Länder, and local governments in a ratio of 4:2:1. This proportion has changed in favour of the Länder because of the greater GNP elasticity of the income tax than of the federal turnover tax, on the one hand, and of the local tax sources, on the other.[1]

TABLE 4. FEDERAL REPUBLIC OF GERMANY :
TAX COLLECTIONS BY LEVELS OF GOVERNMENT, 1962[1]

In billions of Deutsch Marks.

TYPES OF TAXES	LEVEL OF GOVERNMENT			TOTAL
	FEDERAL	STATE	LOCAL	
Federal and State Taxes :				
Taxes on income and profits	11.9	22.1	—	34.0
Wage tax	*4.3*	*8.0*	—	*12.3*
Assessed income tax, etc.[2]	*4.8*	*8.9*	—	*13.7*
Corporation profit tax	*2.8*	*5.2*	—	*8.0*
Other personal taxes				
Taxes on net wealth and property	2.1	2.2	—	4.3
Equalization-of-burden levy[3]	*2.1*	—	—	*2.1*
Tax on net wealth	—	1.9	—	*1.9*
Turnover tax[4]	19.2	—	—	19.2
Excises	10.2	0.8	—	11.0
Tobacco tax	*4.1*	—	—	*4.1*
Gasoline tax	*3.7*	—	—	*3.7*
Liquor tax	*1.2*	—	—	*1.2*
Taxes on transfers and transports	0.8	3.1	—	3.9
Automobile tax	—	*1.9*	—	*1.9*
Customs	3.3	—	—	3.3
Local Taxes :				
Enterprise tax	—	—	8.8	8.8
Real estate tax	—	—	1.8	1.8
Others	—	—	0.6	0.6
Total	47.5	28.2	11.2	86.9

1. According to federal and state constitutions, excluding special appropriations between states and local authorities. Preliminary results. Figures include Berlin-West.
2. Including tax on capital returns.
3. Not part of the federal budget but part of the special equilization fund.
4. Including turnover-equalization tax.

Source : Compiled by Karl Hauser from *Finanzbericht*, pp. 40-41.

In the United States local communities generally carry a major share of the responsibility for financing and administration of secondary and elementary schools but each of the states contributes to the local authority finances. In 1962 state governments financed about 37 per cent of the total sum spent on education by the localities.

Almost two-thirds of all taxes in the United States are collected by the national government, and the remaining third is divided about equally between states and localities. The national government's aid to states and localities for all public purposes amounts to 13.5 per cent of the total general revenues of these governmental jurisdictions.

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[1] Hauser, Karl, « Taxation and Economic Growth in Western Germany », *Conference on Tax Policy and Economic Growth in Selected Countries*, sponsored by National Bureau of Economic Research, Inc., and the Brookings Institution, December 5, 6, and 7, 1963, Washington, D.C., p. 65.

For education the national share is considerably lower. National support of schools goes primarily to compensate localities for the loss of tax revenues due to national government operation in the locality. However, as will be indicated later, important school programmes are aided on a demonstration and experimental basis.

One may say of the 50 states that they rarely do the same things or do them in the same way. A few states finance two-thirds or more of the local school programmes, and at the other extreme, state aid accounts for only a small share of local school expenditures. The proportion of school expenditures financed by state authorities is shown in Table 5.

Yugoslavia's school programme, as in other federal systems of government, is also financed primarily by provincial or local governments. The national government's assistance is restricted to the poorest regions. The republics (or provinces) set the standards for school curricula but local authorities are, for the most part, responsible for financing primary and secondary schools. Approximately 75 per cent of total regular maintenance expenditures are made by the localities. Since 1960, in an effort to increase the funds available for education, the following steps have been taken.[1]

1. an earmarked share of governmental revenue from such sources as the income and turnover tax is set aside for schools ;
2. a new earmarked « educational tax » is imposed on wage earners as a « social fund » ;
3. enterprises are given authority to establish and finance schools directly from their own funds, using, if they elect, one per cent of wage earners' income and with permission to write off the costs of the training as a cost of production.

The percentage distribution of current expenditures in Yugoslavia, by source of funds, for 1957 and 1961, illustrates the impact of the new earmarked social funds for education during this period of rapidly rising educational outlays.

	1957	1961
Total	100.0	100.0
Communes	67.4	76.9
Districts	15.6	1.2
Republics	17.0	21.9

Types of Grants-in-Aid

Kjeld Philip has classified grants-in-aid in the following way : *(a)* general or unallocated grants, *(b)* specific or allocated grants for purposes, *(c)* specific or allocated grants for measures[2]. Each of these is cross-classified as follows :

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[1] *Country Reviews,* from OECD *Policies for Science and Education :* Yugoslavia, p. 62.

[2] Philip, Kjeld, *Intergovernmental Relations,* Institute of Economics and History, Ejnar Musksgaard, Copenhagen, 1954.

259

uniform percentage,
varying percentage,
grants fixed by criterion,
grants fixed by estimate,
amount beyond a certain sum.

Without intending to detract from the contribution Professor Philip has made, I propose a reclassification of the general forms

TABLE 5. UNITED STATES : PERCENTAGE DISTRIBUTION OF REVENUE RECEIPTS FOR PUBLIC SCHOOLS FROM FEDERAL, STATE, LOCAL AND OTHER SOURCES, BY STATE, 1959-60

	TOTAL REVENUE	FEDERAL	STATE	LOCAL AND OTHER
United States	100.0	4.4	39.1	56.5
Alabama	100.0	7.5	65.3	27.2
Arkansas	100.0	8.9	45.9	45.2
Connecticut	100.0	3.1	34.6	62.2
Delaware	100.0	2.1	82.5	15.3
Dist. of Columbia	100.0	14.4	—	85.6
Florida	100.0	5.2	56.5	38.3
Georgia	100.0	7.4	64.0	28.6
Illinois	100.0	2.5	20.7	76.9
Indiana	100.0	3.0	29.9	67.0
Iowa	100.0	4.1	12.0	83.9
Kansas	100.0	5.2	19.2	75.6
Kentucky	100.0	7.1	45.8	47.2
Louisiana	100.0	4.2	70.2	25.5
Maine	100.0	5.9	25.8	68.2
Maryland	100.0	7.0	34.2	58.7
Massachusetts	100.0	5.3	19.9	74.8
Michigan	100.0	2.8	43.2	54.0
Minnesota	100.0	3.0	39.7	57.3
Mississippi	100.0	7.0	56.5	36.5
Missouri	100.0	4.4	31.0	64.7
Nebraska	100.0	4.6	6.5	88.9
New Hampshire	100.0	5.9	6.3	87.8
New Jersey	100.0	2.5	23.7	73.8
New York	100.0	1.9	39.5	58.6
North Carolina	100.0	6.0	66.7	27.4
North Dakota	100.0	6.0	26.4	67.6
Ohio	100.0	3.1	27.7	69.2
Pennsylvania	100.0	3.0	45.8	51.3
Rhode Island	100.0	6.5	23.2	70.3
South Carolina	100.0	7.7	66.6	25.7
South Dakota	100.0	9.0	8.9	82.2
Tennessee	100.0	6.9	58.0	35.1
Vermont	100.0	3.5	24.7	71.8
Virgina	100.0	11.0	37.0	52.0
West Virgina	100.0	4.9	52.9	42.2
Wisconsin	100.0	2.9	22.6	74.5

of grants-in-aid that is more suggestive of both the objectives and the flexibility of this financial instrument and of the public issues involved in its implementation. The general forms of grants-in-aid are best described by the following terminology :

Fiscal grant. A grant that provides funds to a sub-unit of government with no programme strings.

Supporting block programme-grant. A grant that is designed to finance or help finance expenditures for broadly defined programme purposes.

Supporting categorical programme-grant. A grant designed to finance or to help finance a specific programme purpose.

Supporting segment grant (programme-cost-item grant). A grant designed to finance or help finance a part of the budgetary costs of a programme.

Stimulating or demonstration grant. A grant designed to encourage local initiation of a public service or development of a service on an experimental or demonstration basis.

Within these grant categories, the degree of national government support may vary widely. The effect of the grant on the volume and quality of educational and other public services is determined primarily by *(a)* whether the grant arrangement vests programme initiative in the national, or in local units, *(b)* whether the decision to spend more requires at the same time a decision to raise additional local taxes, and *(c)* the tax resources of the locality. A 100 per cent grant equal to total costs that are subject to central budgetary review may in effect transfer programme initiative from local units to the national government. The decision to expand secondary schooling either by increasing enrolments or by improving quality is essentially, in this case, a decision resting with the national government. A 100 per cent grant of standard programme costs, defined either as standard costs per item of expenditure or as a standard per person served, may have a similar impact, but in large part this impact would depend upon the level of the « standard ». If the standard is set at a low level in terms of community acceptability, actual expenditures may exceed this « standard », depending upon the community's decision to spend more and tax more. The 100 per cent grant then becomes in practice a grant covering a fraction of costs with the fraction determined not by the national government but the localities.

In some instances the « standard costs » are required by law to be met jointly by national and local authorities, with the share of the local authorities determined on a uniform percentage basis or in accord with their local fiscal capacity. This grant method is commonly used by the states of the United States in the financing of « foundation programmes » for primary and secondary schools. The operation of most of these foundation programmes is such that incremental or marginal costs beyond foundation programme limits must be borne wholly by localities out of additional local taxes. The initiative for expansion rests with the localities but at the same time the burden of additional local taxes acts as a barrier to this expansion, at least in the short run.

A somewhat different form of equalisation aid, in which incremental costs are shared between states and localities on a variable basis so as to require a uniform incremental or marginal tax effort on the part of the localities, has come into wider use. The aim of this equalisation grant is to set the state grant so that the same increase in expenses per capita in all the local governments, whether rich or poor, would lead to the same increase in tax effort.

A number of Swedish state grants are made in accordance with the general aim of greater equality of local tax effort for incremental expenditures. State grants for school building take into account the income per capita in the school district and vary the percentage grant inversely with the average income per head. Swedish state grants for school lunches similarly incorporate the notion of variable percentage grants — grants that vary inversely with average income per capita so that the same outlay per capita leads to the same tax levy per 100 crowns of income. Variable matching ratios, it should be noted, are applied against standard expenses set forth in statute, not actual outlays. The school lunch programme essentially leaves the decision to the locality to stay within the standard costs set, or if it exceeds this level, to finance the entire addition out of local funds.[1] The impact of this grant programme is thus similar to that of educational foundation programmes in many states of the United States.

It is only in those instances where incremental expenditures are financed either entirely by the national government or are substantially shared by the national government that local resources are not a critical determinant of the rate of expansion of educational or other public service. The form may be a percentage grant or a flat grant, or a differential grant subsidising the margin of costs beyond some minimum fiscal effort. But the form is far less important than the combined grant characteristics that determine whether the initiative in the provision of public services lies with the national government or the locality, whether expanded services simultaneously require local tax increases and whether the local resources are adequate for the public tasks.

Inter-governmental aids are complex instruments whose overall impacts are difficult to trace and evaluate. A number of factors have to be considered ; among these are :

1. the basic financial underpinnings of local governments such as a general fiscal grant, or a supporting grant for a broad class of public service, e.g. public welfare ;
2. the range and scope of public services for which local governments carry major financial responsibility ;
3. the combination of grant programmes for carrying out all local public services and the interrelation of these grants in terms of residual local financing out of local tax sources ;

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[1] *Country Reviews* from OECD *Policies for Science and Education :* Sweden, p. 74.

4. the combination of grant programmes for financing education, especially where categorical grants, segment grants, and demonstration grants are offered to the same school system under varying conditions and with different reimbursement ratios ;
5. the nature of the local fiscal system and the responsiveness of this system to increasing public service requirements in a growing economy ;
6. the historical development of the educational system, and the earlier division of programme responsibility and financial responsibility among levels of government, including such divisions of responsibility in unitary systems of government and federal systems.

Without a detailed knowledge of these factors, as well as the specifics of the inter-governmental aids for secondary schools, it is difficult to evaluate the essential components of secondary school financing and to classify the ongoing methods of finance. In some nations with apparently decentralised programmes the initiative and responsibility for educational expansion seem to rest with the national government, however, at the same time, responsibility for educational programmes is often divided among governments[1] (Table

TABLE 6[1]. SHARE OF CURRENT EDUCATIONAL OUTLAYS, EXCLUDING TRANSFERS, BY CENTRAL AND LOCAL GOVERNMENTS

COUNTY	TOTAL	NATIONAL	PROVINCIAL AND LOCAL
Austria (1961)	100.0	90.3	9.7
Belgium (1962)	100.0	96.1	3.9
Denmark (1958)	100.0	27.3	72.7
Greece (1961)	100.0	83.1	16.9
Norway[2] (Expenditures)	100.0	20.0	80.0
(Source of funds : all)	100.0	46.0	54.0
Portugal (1959)	100.0	94.2	5.8
Sweden[3] (Expenditures)	100.0	19.2	80.8
(Source of funds)[3]	100.0	56.7	43.3
Switzerland	100.0	2.2	97.8
Turkey[4]	100.0	72.7	27.3
UK (Expenditures)	100.0	0.8	99.2
(Source of funds)[5]	100.0	64.2	35.8
USA (Expenditures)	100.0	1.4	98.6
(Source of funds)[6]	100.0	8.0	92.0

1. Except where otherwise indicated below data were reported by Jane Sutherland of the OECD Secretariat, from returns to 1963-64 OECD questionnaire on current expenditures on education.
2. Eide, Kjell, *Budgetary Control and Yardsticks for Accounting Expenditures in Norway.*
3. *Educational Policy and Planning in Sweden. A Swedish contribution to the OECD Program on Educational Investments and Planning,* Appendix VIII, pp. 20 and 21.
4. Preliminary Turkish report for the Mediterranean Project (Table V. 10).
5. Williams, Alan, *Centralization and Decentralization in Public Finance,* International Institute of Public Finance, Congress of Istanbul, 1962, Table 1.
6. U.S. Bureau of the Census, Governments Division, *Governmental Finances in 1962,* October 1963, p. 5.

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[1] Philip, Kjeld, *Intergovernmental Relations,* Institute of Economics and History, Ejnar Musksgaard, Copenhagen, 1954.

6). The Netherlands system of education, for example, calls for freedom of community action on educational matters but almost exclusive central government financing. The central government maintains central budgetary control by review of budgets submitted by its schools as a condition for 100 per cent grants. The post-primary Education Act of 1963 places responsibility more definitely on the nation's Minister of Education. While the proposal for a school project comes from the local community, the decisions are vested in the national government[1,2].

In Spain public education policy is nationally determined and, for the most part, nationally financed. In both the Netherlands and Spain, however, private schools dominate secondary education ; almost 70 per cent of the opportunity for education at all levels in the Netherlands is provided by private denominational and non-denominational schools, and in Spain two out of every three secondary students attend private schools.

In Greece public education predominates and secondary education is financed and administered by the national government. Neither in Spain nor in Greece does the national government make support grants to private institutions, although scholarships to students are provided. In the Netherlands, on the other hand, private religious schools are financed by the central government.

Categorical grants for education, supplemented by fiscal equalisation aid, characterise the Norwegian and Swedish systems. In Sweden, costs of secondary education are allocated between the state and municipalities. Grants are made by the central government in accord with regulations that specify in detail the amount of support and purpose of expenditures for both municipal and private schools. A transitional period is now in process in secondary education in Sweden with a trend toward a shift of responsibility from central to local authorities[3,4]. The factors underlying this shift are the favourable income tax raising capabilities of the local governments and the excessive administrative rigidities of central controls.

The Norwegian system is characterised by local administration, joint central government and local financing, and central government controls on facilities and educational programme. The central government provides categorical aids in support of education and fiscal

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1. *Educational Planning in the Netherlands, a Dutch contribution to the OECD Programme on Educational Investment and Planning,* Directorate for Scientific Affairs. Paper submitted for information to participants at the fifth meeting of directors and representatives of national groups, DAS/EIP/64.6 Paris, 3rd April, 1964, p. 79.

2. Netherlands Economic Institute. *The Quantitative Relationships between Economic Development, Manpower Requirements and School Enrolment.* Outline submitted for information and discussion at the preparatory meeting of the Study Group in the Economics of Education held at Worcester College, Oxford, 26th and 27th June, 1964, Directorate for Scientific Affairs, OECD DAS/PD/64.38 Paris, 16th June, 1964, p. 2.

3. Orring, Jonas ; *Comprehensive Schools and Continuation Schools in Sweden : A Summary of the Principal Recommendations of the 1957 School Commission,* Kungl Ecklesiastik departementet, Stockholm, 1962, p. 154.

4. *Swedish Report for Directorate of Scientific Affairs,* OECD Appendix 8.

grants to localities in inverse relation to fiscal resources[1,2]. Grants are made to communes for compulsory education on a categorical budget-item basis, with the percentage of support varying from category to category. Central governments loans are far more important than grants, however, in helping defray the costs of school construction.

In evaluating the present Norwegian aid system Mr. Eide notes the following :

1. the encouragement given to the transition to larger compulsory schooling by higher reimbursement ratios to the 9 year compulsory school ;
2. the lack of adequate support to encourage the nation-wide development of gymnasia, vocational schools and high schools, and at the same time the continuing of sizable support for people's schools (folkschools) ;
3. the greater incentive to establish gymnasia than vocational training institutions, because while both types of institutions receive equal maintenance support, operational costs for vocational training are higher.

In the decentralised school system of the United Kingdom, the national government makes two types of grants in support of local government : the General Grant and the Rate Deficiency Grant. The first, the General Grant, is calculated by a formula that measures public service needs and in a minor way, fiscal capacity ; the Rate Deficiency Grant seeks to provide additional revenue to local authorities so as to bring their yield up to the amount per capita that would be collected if their fiscal resources were equal to the national average. One of the main purposes of the General Grant, instituted in 1958, was to reduce the national control over local authorities and give them more latitude in their expenditures decisions ; another was to increase the autonomy of the central government's budget by freeing that budget from local government decisions on educational expenditures. A limitation is imposed on the General Grant, namely that the grant will be computed so as to allow local authority expenditure increases only up to the national average, or if a locality's expenditure is above the national average, only at that rate of increase equal to average rate of increase. Alan Williams in commenting on this limitation noted :

> The subtlety of this provision cannot but evoke admiration for the ingenuity of its inventors. It leaves below average spenders virtually unaffected ; keeps the others firmly in line[3].

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[1] Eide, Kjell, *Budgetary Control and Yardsticks for Assessing Education in Norway.* Paper for Study Group on Economics of Education, OECD, September 1964.

[2] Hove, Olav, *An Outline of Norwegian Education.* Published by the Royal Norwegian Ministry of Foreign Affairs (Office of Cultural Relations) and the Royal Norwegian Ministry of Church and Education, Oslo, 1958, p. 189.

[3] Williams, Alan, *Centralisation and Decentralisation in Public Finance with Special Reference to Central and Local Government in England and Wales.* International Institute of Public Finance, Congress of Istanbul, 1962, (processed) p. 36, and Appendix.

To understand the impact of the 1958 fiscal aids on educational outlays it is essential to consider both the earlier educational grant programme and the direct controls and reviews imposed. The National Ministry of Education has regulatory and review authority over physical facilities for schools, and also over teachers' salaries, qualifications and retirement. All local authorities are required, for example, to comply with a national salary scale. Furthermore, Ministry approval is required before a local authority may make grants to aid secondary schools.

Earlier, England and Wales had a block grant in support of educational expenditures of local authorities. This block supporting grant was allocated by formula calling for *(a)* a fixed sum per school child ; plus *(b)* a specified percentage of approved expenditures ; reduced by *(c)* an amount determined by the fiscal capacity of the local authority. The grant accounted for over 60 per cent of all educational expenditures.

While greater economy in education and a check of mounting school spending motivated the shift from a block grant for education to a fiscal grant, one observer notes :

> ...educational spending in England and Wales has continued apace, and it is hard to discover where the economy effects of the 1958 Act lie. For a variety of reasons the government has raised the total of the General Grant substantially from one grant period to the next and has ordered numerous increases within the two-year grant periods. Thus, with respect to the total distribution, the General Grant has been administered almost exactly like the percentage grants it replaced[1]...

Joint systems of financing have varying effects on school programmes. It is possible within an inter-governmental aid programme that initiative rests with the national government and marginal expenditure decisions are essentially national tax decisions. However, the arrangements may be such that the decisions to expand are essentially local and that these decisions involve, in turn, local taxing decisions. Federal systems necessarily differ from the unitary government, especially in those cases when national government under federal systems has no regulatory powers over education and the grant mechanism is used to offer a carrot to the local governments to encourage them to accept funds and along with them the controls and regulations. Unitary systems of government, even where there are aids, have regulatory powers. And at least in one system, as Philip has noted :

> The power of making regulations has to a very large degree been transferred to the state, so that the work of the local governments consists not so much in deciding what is to be done in each individual case as in finding out what paragraph applies in each case, and then finding out from that paragraph what view is to be taken of the matter[2].

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[1] Benson, Charles, *Some Comments on the New General Grant in England and Wales*, August, 1963, p. 7, (processed).

[2] Philip, Kjeld, *Intergovernmental Relations, op. cit.*, pp. 60-61.

Educational and Public Policy Objectives

As we noted earlier in this discussion, a rational choice of methods of organisation and financing of school systems would take into account basic educational and public policy objectives. An analysis of the effect of methods on these objectives is presented below.

1. *Geographic uniformity or disparity*

The central systems of education may be expected to result in considerable uniformity in quantity and quality of education among geographic areas. Measurement of such uniformity is fraught with difficulty. Several indices could be used singly or in combination to measure regional variation. They include :

1. expenditures per pupil ;
2. expenditures per child of school age ;
3. expenditures per classroom ;
4. enrolment ratios ;
5. size of classes ;
6. percentage of first-year students graduating.

No one of these measures is wholly adequate. For example, expenditures per pupil enrolled may not be uniform even for uniformly defined categories of expenditures. Prices in different regions for nearly uniform levels of teaching services may differ because of variations in costs of living. School plant maintenance costs also may differ due to climatic conditions. Economies of scale are possible where there is sufficient school-age population to warrant large institutions. The mix of academic and technical subjects also will affect costs of operation, with higher expenditures especially for equipment attaching certainly to some types of vocational and technical training.

Figures on operating costs per pupil, moreover, obscure regional variations in enrolment ratios. Costs per child in the appropriate age group, however, which would reflect such enrolment variations, necessitate a careful accounting of expenditures of private schools which, in a number of countries, provide a significant portion of secondary schooling.

Information on costs of education per classroom unit helps to provide more comparable data for schools in rural and urban areas, and to show cost variations for operational teaching units. Like other cost figures, however, they reflect neither the differences in price levels among regions, nor the basic variations in expenditures between vocational and academic courses.

The other indexes are, at best, indicative of some aspect of quantity or quality of education.

The data actually available to test the extent of regional uniformity are far from complete. France, with its central system of education, reports considerable regional variation in enrolments in secondary schools. These variations may be attributed to factors other than regional differences in fiscal capacity in localities. For example, there is greater prosperity of agriculture in the northern part of the country than in the south ; as a consequence, there is a higher demand for education in the south where employment alternatives to agriculture are sought. Nevertheless regional variation in enrolment suggests geographic disparity in educational spending on a per capita basis. Rates of enrolment in the first year of secondary school range from 72.9 per cent in the top nine of the 90 Départements to a low of 35.8 per cent in *the nine lowest* Départements. (Table 7.) The distribution of Départements by rate of enrolments is shown in Table 8.

TABLE 7. FRANCE :

RATES OF ENROLMENT IN THE 9 DEPARTEMENTS WITH HIGHEST AND LOWEST ENROLMENT RATES ; FIRST YEAR OF SECONDARY SCHOOL (PUBLIC AND PRIVATE) 1962-63

9 HIGHEST DÉPARTEMENTS	PROPORTION OF AGE-GROUP ENROLLED	9 LOWEST DÉPARTEMENTS	PROPORTION OF AGE-GROUP ENROLLED
Finistère	85.0	Mayenne	35.8
Corse	78.4	Vendée	39.8
Lozère	76.8	Orne	40.5
Var	75.0	Dordogne	41.2
Alpes (Basses)	74.9	Aude	41.3
Savoie (Haute)	74.4	Sèvres (Deux)	41.3
Alpes (Hautes)	73.6	Seine-Maritime	41.5
Herault	73.2	Somme	42.0
Ariège	72.9	Landes	42.1

Source : National Ministry of Education, *Statistical Information*, Paris, Central Statistical Service, April 1964, p. 141.

TABLE 8. FRANCE :

DISTRIBUTION OF DEPARTEMENTS BY RATE OF ENROLMENT IN FIRST YEAR OF SECONDARY SCHOOL, 1962-63

RATE OF ENROLMENT	NUMBER OF DEPARTEMENTS	PER CENT OF ALL SECONDARY ENROLMENTS
Total	90	100.0
75 per cent or more	4	4.4
70 to 74.9	7	4.3
65 to 69.9	7	16.4
60 to 64.9	12	16.5
55 to 59.9	17	15.6
50 to 54.9	14	20.5
45 to 49.9	13	10.1
40 to 44.9	14	11.1
35 to 39.9	2	1.1

Source : National Ministry of Education, *Statistical Information*, Paris, Central Statistical Service, 1964, p. 139.

Greece, despite its centralised secondary school programme, has a marked concentration of educational opportunities in the area of the capital city. While this area accounts for less than one-sixth of the total population in the age group 12-17, it has one-third of all *gymnasium* students ; and almost two-thirds of technical and vocational students. By way of contrast Thrace, with 5 per cent of the population 12-17 years of age, has only 2.3 per cent of all *gymnasium* students and less than 1 per cent of technical and vocational school entrants. Table 9 illustrates the geographic variation in percentage of primary school graduates entering gymnasium in Greece.

TABLE 9. GREECE :
PERCENTAGE OF PRIMARY SCHOOL GRADUATES ENTERING GYMNASIUM, BY REGION, 1961

REGION	PERCENTAGE ENTERING GYMNASIUM
Athens	80.7
Rest of Central Greece and Euboea	39.6
Peloponnese	47.9
Ionian Islands	37.4
Thessaly	32.5
Macedonia	39.4
Epirus	31.8
Crete	45.3
Aegaen Islands	37.3
Thrace	26.8

Source : Compiled for OECD, Mediterranean Project, Greece, « Education for Economic and Social Development » (p. 55), from *National Statistical Yearbook of Greece*, 1962.

England and Wales with a decentralised school system have about the same geographic variation in enrolment ratios as does France[1]. However, data on expenditures per pupil are available for England and Wales indicating on the whole considerable uniformity. Expenditures per pupil in secondary school varied less than 20 per cent for 80 per cent of the local educational authorities. At the extremes, 5.6 per cent of the local educational authorities spent £ 68 per year per secondary school pupil and about 5 per cent of the authorities £ 100 or more (Table 10).

Expenditure data for the *Länder* in Germany (Federal Republic), (Table 11), also indicate far less variation than one might expect[2]. There is considerable uniformity for a number of the *Länder* (Table 11). In contrast, expenditures per classroom in the United States range from less than $ 3,500 to over $ 13,000 with a ratio of almost 4 : 1 over the country (Table 12).

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[1] Ministry of Education, *Statistics of Education*, London. Her Majesty's Stationery Office, Annually.

[2] Palm, Günter, « Die Ausgaben für Schulen und Hochschulen in der Bundesrepublik Deutschland, 1950-1960 », Hochschule für Internationale Pädagogische Forschung, Frankfurt/Main, *Abteilung Okonomie*, Juli 1963, Frankfurt/Main, Juni 1964, p. 90.

TABLE 10. ENGLAND AND WALES :

EXPENDITURES PER PUPIL IN SECONDARY SCHOOLS BY LOCAL EDUCATION AUTHORITY, 1960-61

£ per pupil.

	PER CENT DISTRIBUTION OF LOCAL AUTHORITIES
All authorities	100.0
68	5.6
72	6.2
76	16.0
80	17.4
84	17.4
88	18.7
92	11.1
96	2.8
100 and over	4.9

Source : Compiled by Rose Knight from Institute of Municipal Treasures and Accounts, Society of County Treasurers, *Education Statistics 1960-61,* February, 1962.

TABLE 11. FEDERAL REPUBLIC OF GERMANY :

CURRENT EXPENDITURES FOR SECONDARY EDUCATION PER PUPIL, BY LANDER, 1960

Deutsch Marks per Pupil.

LANDER	MIDDLE SCHOOLS AVERAGE	UPPER SCHOOLS AVERAGE
All	848	1,407
Schleswigholstein	838	1,436
Niedersachsen	837	1,244
Nordrhein Westfalen	868	1,647
Hessen	838	1,309
Rheinland Pfalz	616	1,489
Baden-Württemberg	967	1,132
Bayern	641	1,229
Hamburg	892	1,848
Bremen	n.a.	1,747
West Berlin	1,234	1,729

Source : Based on Günter Palm ; *op. cit.,* 1963, (pages 58-61).

TABLE 12. ANALYSIS OF CLASSROOM UNIT EXPENDITURES AT SELECTED PERCENTILES, BY STATE : 1959-60, UNITED STATES

STATE	RATIO OF HIGH TO LOW (98TH TO 2ND PERCENTILE)	RATIO OF HIGH TO MEDIAN (98TH TO 50TH PERCENTILE)	RATIO OF MEDIAN TO LOW (50TH TO 2ND PERCENTILE)
1	2	3	4
United States	3.86	1.75	2.21
Alabama	1.62	1.31	1.24
Alaska	1.63	1.11	1.47
Arizona	2.30	1.56	1.47
Arkansas	2.45	1.71	1.43
California	1.91	1.34	1.43
Colorado	1.86	1.26	1.48
Connecticut	2.02	1.47	1.38
Delaware	1.87	1.44	1.30
Florida	1.53	1.26	1.22
Georgia	2.26	1.71	1.32
Idaho	1.81	1.36	1.33
Illinois	2.49	1.50	1.66
Indiana	2.68	1.39	1.93
Iowa	2.52	1.39	1.82
Kansas	2.63	1.37	1.92
Kentucky	2.45	1.83	1.34
Louisiana	1.47	1.24	1.19
Maine	2.14	1.35	1.59
Maryland	1.63	1.20	1.37
Massachusetts	1.82	1.37	1.33
Michigan	3.49	1.61	2.17
Minnesota	3.30	1.36	2.43
Mississippi	2.30	1.65	1.40
Missouri	3.96	1.51	2.63
Montana	2.29	1.37	1.67
Nebraska	2.75	1.37	2.00
Nevada	1.37	1.10	1.24
New Hampshire	1.96	1.30	1.51
New Jersey	2.10	1.33	1.58
New Mexico	1.51	1.36	1.11
New York	1.84	1.40	1.31
North Carolina	1.83	1.56	1.17
North Dakota	2.81	1.77	1.59
Ohio	2.61	1.58	1.66
Oklahoma	1.74	1.22	1.43
Oregon	2.37	1.19	2.00
Pennsylvania	1.98	1.44	1.37
Rhode Island	1.75	1.26	1.39
South Carolina	1.85	1.30	1.43
South Dakota	2.74	1.34	2.05
Tennessee	2.25	1.57	1.44
Texas	2.05	1.32	1.55
Utah	1.42	1.20	1.19
Vermont	2.30	1.45	1.59
Virginia	2.95	2.02	1.46
Washington	1.55	1.24	1.26
West Virginia	1.77	1.36	1.30
Wisconsin	3.84	1.50	2.55
Wyoming	1.98	1.50	1.32

2. *Equity in educational opportunity*

Geographic variations in secondary schooling are partly a consequence of the differences in educational opportunity by socio-economic classes.

The Directorate of Scientific Affairs of the OECD, through its various activities, and national education planning agencies have encouraged the development of what is by now a sizeable body of data on variations in educational opportunity by socio-professional groups. National study after study emphasises the disparities among socio-economic groups in use of educational resources. (See footnotes 1 through 11.) Children of farmers and of manual workers seek and receive far less education than children of professional workers. The roots of these discrepancies lie deep in history. But almost everywhere in Europe, despite differences in methods of organising and financing education, the school system is being expanded to reach new strata of society. The distance to be traveled toward equality of opportunity is far and the barriers considerable. Limited family aspirations, inadequate motivation, lack of educational stimulus, poor environmental conditions for study in the home, differentiation of pupils at an early age and lack of financial resources that necessitates early participation in the labour force are some of these barriers. It should be noted that for most of Europe, and in the United States, direct student charges are not a significant factor in the restrictive selection for secondary schooling. In the case of higher education however this is perhaps more important as a selection factor in the United States than in most European countries where there is no or little tuition for those gaining entry.

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1. Girard, Alain, *The Growth and Democratisation of Education in France - Recent Progress.* Paper circulated to the preparatory meeting of the Study Group in the Economics of Education on the Demand for Education. OECD DAS/PD/64.20, Oxford, 26th and 27th June, 1964, p. 20.

2. Poignant, Raymond, *School Attendance at Secondary Level and Social Origin of Pupil.* Paper circulated to the preparatory meeting by the Study Group on the Economics of Education on the Demand for Education. OECD, DAS/PD/64.31, Oxford, 26th and 27th June, 1964, p. 19.

3. Ministry of Education, *15 to 18.* A report of the Central Advisory Council for Education, London, Her Majesty's Stationery Office, 1959, p. 6.

4. Committee on Higher Education, *Higher Education.* Report of the Robbins Committee, London, Her Majesty's Stationery Office, p. 51.

5. Wallberg, Klas, and Cassel, Per-Gunnar, *The Demand for Higher Secondary School (Gymnasium) Education in Sweden.* Translation from report of Swedish Royal Commission on Higher Education, submitted for discussion at *fourth* meeting of directors and representatives of national EIP groups, 25-26th November, 1963. Directorate for Scientific Affairs Programme on Educational Investment and Planning, OECD, DAS/EIP/63.28, Paris, 22nd November, 1963, p. 41.

6. Ruin, Olof, *The Selection Process in the Swedish Educational System-Geographical and Socio-economic Aspects.* Paper circulated to participants at *third* meeting of directors of national EIP teams for information, Directorate for Scientific Affairs Programme of Educational Investment and Planning, Swedish Contribution to the EIP, OECD, DAS/EIP/63.17, Paris, 10th May, 1963, p. 25.

7. Ruiter, R., *The Past and Future Inflow of Students into the Upper Levels of Education in the Netherlands.* Paper circulated for consideration and

Some illustrations may serve to emphasis that methods of school administration and financing have little relation to socio-economic inequality in education. In France with its centralised educational system there is wide variation by social background in secondary school enrolment rates[13]. In 1962-63, 94 per cent of children of professionals were enrolled in secondary school as contrasted with 32 per cent of children of agricultural workers, 40 per cent of the children of farmers and 45 per cent of the children of workers. While there continue to be disparities, the situation has improved markedly during the past decade. In 1954 only 13 per cent of the children of agricultural workers, 16 per cent of children of farmers and 21 per cent of the children of unskilled workers entered secondary schools. The disparities are even greater if only enrolments in the lycée or private secondary school, which prepare for the university, are considered. Children from privileged classes have a better than 7 to 1 margin of opportunity over those less privileged.

Alain Girard in his paper for the OECD Study Group on the Economics of Education summarised the French experience in this way[14] :

> Children with the same average success but with different social backgrounds do not have the same educational opportunities nor the same promise for the future. This fact brings us to the heart of the matter. The choices vary according to the different social groups and the function and value of the studies

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discussion at the *fourth* meeting of directors and representatives of national EIP groups, 25th and 26th November, 1963, Directorate for Scientific Affairs Programme on Educational Investments and Planning, OECD, DAS/EIP/63.22, 4th November, 1963, p. 78.

[8] Hess, Franz, *The Social Characteristics of Student Groups Demanding Higher Secondary Education in Basle, Switzerland.* Paper circulated for information to participants at the *fourth* meeting of directors and representatives of national EIP groups, 25th and 26th November, 1963, Directorate for Scientific Affairs Programme on Educational Investment and Planning, OECD, DAS/EIP/63.21, Paris, 8th October, 1963, p. 12.

[9] Girard, Alain, *The Growth and Democratisation of Education in France - Recent Progress, op. cit.*

[10] Hayward, Beresford, *The Current Efforts in the OECD Educational Investment and Planning Programme to Project Student Inflow into the Upper Levels of Education : Technique and Educational Policy.* Paper circulated for information at *fourth* meeting of directors and representatives of national groups participating in the EIP programme, 25th-26th November, 1963, Directorate for Scientific Affairs Programme on Educational Investment and Planning, OECD. DAS/EIP/63.31, Paris, 10th January, 1964, p. 11.

[11] Von Mutius, Bernhard, *Comments on Problems of the Inflow of Students into Higher Education.* Paper circulated to participants at *fourth* meeting of directors of national EIP groups, Directorate for Scientific Affairs Programme on Educational Investment and Planning, OECD, DAS/EIP/63.29, Paris, 25th and 26th November, 1963, p. 11.

[12] Ministry of Education, *Half Our Future.* A report of the Central Advisory Council for Education (England), London, Her Majesty's Stationery Office, 1963, p. 299.

[13] Poignant, Raymond, *School Attendance at Secondary Level and Social Origin of Pupil, op. cit.*

[14] Girard, Alain, *op. cit.*

are not appreciated in the same way everywhere. The machinery of social preservation comes into play perpetuating old structures from generation to generation.

The Crowther report on Secondary Education in the United Kingdom emphasises « the extent to which social background enters into the decision about which boys and girls will continue in full time education beyond the minimum leaving age. Almost one in four of all age school-leavers, but only one in ten of grammar and technical school-leavers were children of semi-skilled or unskilled manual workers. »[1] The Robbins Committee reported « the proportion of young people who enter full time higher education is 45 per cent for those whose fathers are in the higher professional group, compared with only 4 per cent for those whose fathers are in skilled manual occupations. »[2]

While the stated objective of the Swedish educational system is to make it possible for all young people who have an interest and aptitude for higher studies to continue their education without regard to social and economic background, the Swedish state-local system of education falls short of this goal[3]. Olof Ruin in his 1963 paper for the EIP[4] concluded, after a comparison of the occupational characteristics of fathers of pupils entering the gymnasia in 1960 with all total male voters, that a socially conditioned leakage between lower schools and the gymnasia exists in Sweden. Children of farmers and manual workers tend to be under-represented among the enrollees.

In the United States and in Canada, despite decentralisation of educational administration and financing, those of high school age, without regard to income and occupational status of their parents, are enrolled in school.

If we group nations by their method of secondary school financing, we perhaps come close to the conclusion that socio-economic patterns in use of educational services are dependent on forces more basic than the division of responsibility for administration and financing among governmental units within a nation. (Table 13.)

A greater equalisation of opportunity is sought by nations to maximise the effectiveness of their human resources. It has been argued that efficiency in the use of resources, especially in the poorer nations, necessitates emphasis, through the selection process, on those who come to formal education with the greatest potential. Existing social differentials in educational opportunity, in part, assure that funds are spent on those groups whose educational development is facilitated by conditions at home and in the community. The Kungälv Conference made clear, however, that expansion in secondary and higher education in Europe would not necessarily exact a price in quality of students admitted. Mr. Halsey in reporting on the conference proceedings stated :

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[1] Ministry of Education, *15 to 18*, *op. cit.*, p. 34.

[2] Hayward, Beresford, *op. cit.*, p. 51.

[3] Wallberg, Klas, and Cassel, Per-Gunnar, *op. cit.*

[4] Ruin, Olof, *op. cit.*

TABLE 13. ENROLMENT IN SECONDARY SCHOOL AS A PERCENTAGE OF THE POPULATION, AGED 15-19, 1960

	ENROL-MENT RATES	METHOD OF FINANCE
Belgium (1957)	31.5	Central
France	—	Central
Germany F.R. (1958)	17.6	Decentralised
Greece	18.4	Central
Italy	19.1	Central
Portugal	9.6	Central
Spain	11.0	Central
Sweden	38.3	Decentralised
Turkey	9.9	Decentralised
United Kingdom	—[1]	Decentralised
United States (1958)	66.2	Decentralised
Yugoslavia	22.9	Decentralised

[1] Data not available in source material.

Source : OECD « The Mediterranean Regional Project », *The OECD Observer*, February 1964, p. 11.

> After the presentation of the evidence no one can have left the Conference in any doubt as to the magnitude of the barriers in the way of the expression of human capacities. Even the most affluent and educationally lavish countries remain but wasteful engines of the energies of their citizens ... the evidence of variations within and between countries permits no other interpretation than that of wholesale wastage of potential abilities. If one nation can bring an eighth or a quarter, or a half of its youth to the satisfactory completion of the general secondary level of education, another nation cannot claim that only three or four, or six per cent of its youth is intellectually qualified for that level of educational attainment.[1]

A detailed examination of the tools available to governments to reduce inequalities in educational opportunity would take us too far afield. It is pertinent, however, to indicate that the broadening of opportunity for secondary schooling has at least three different aspects : (1) more places in school for large numbers and for a longer period, (2) later and less rigorous separation of the streams of education, and (3) more intensive and compensatory educational and related services.

National governments, directly in centralised systems and indirectly in joint state-local systems, can adopt general programmes to provide more school places. The French reform that raises the school leaving age to 16 by 1967 and introduces a two-year observation cycle at the beginning of secondary education as a basis for student selection and guidance illustrates the type of generalised action easily appropriate for a national government. Both in Sweden and in Norway, which have decentralised systems, reforms are in process extending the length of compulsory education and moving towards comprehensive schools that postpone the differentiation of students. In the Netherlands, with its high proportion of private education, a linking class following directly after primary education has been adopted at all types of schools to facilitate and postpone the student differentiation process.

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[1] Halsey, A.H. (editor) : *Ability and Educational Opportunity*, p. 26. Papers by J. Ferrez, J. Floud, T. Husen, K. Harnqvist, J. Vaizey, P. de Wolff, D. Wolfle. Report on the Kungälv Conference organised by the Office for Scientific and Technical Personnel, in collaboration with the Swedish Ministry of Education, 11th - 16th June, 1961. OECD, December 1961, p. 212.

When one moves away from action that can be taken on an across-the-board basis to those problems that call for more intensive services for the socially or economically disadvantaged, the tools available become duller. National governments clearly can adopt or foster by grant subsidies demonstration or experimental programmes in which issues of eligibility for the extra services do not arise. Moreover, governments have identified groups in their population for special educational treatment because of the apparently distinct nature of the problems. For example, the Netherlands has intervened directly in the education of children of barge and caravan dwellers to ensure that children travelling from place to place can maintain a continuity in their education. The national government of the United States has assumed responsibility for the education of American Indian children on reservations ; Norway has special educational provisions for nomadic children in the Far North. However, the problems involved in direct national action or national support of local education that gives larger sums for the education of children in some communities than in others, or for some students and not for others, are difficult to resolve.

Centralised systems have to find rational ways of allocating funds so as to give larger budgetary support to some places rather than to all. Within decentralised systems methods also have to be formulated for enlarging support so that educational « need » is defined in a differentiated way and additional national resources can be devoted to gaining a greater measure of equity by compensating for past neglect.

Post World War II increases in numbers demanding educational opportunities beyond the primary level has forced government concentration on accommodating these vast increases in numbers rather than on providing the extra resources required to ferret out talent where there is social, economic or even institutional resistance to further education.

3. *Viability of the educational programme in a growing economy*

Almost everywhere in the OECD countries planning for education as a facet of economic growth is going forward. The system of administering and financing secondary schools appears to have little influence on such planning. In fact, Yugoslavia, despite its federal system of government and decentralisation of educational responsibility, has expanded expenditures and opportunities for education perhaps more rapidly than other nations. In a 1962 OECD review of policies for education and science, the review team stated : « We note that in many countries a relatively high degree of central control is thought to be necessary, if the educational system is to develop rapidly. Yet Yugoslavia has been able to develop rapidly with a decentralised system. »[1]

Educational planning for economic growth requires a national formulation of manpower needs, a nation-wide appraisal of the existing educational output, and an evaluation of the added output by occupation and education that is indicated by projected economic developments. Certainly the co-ordinate planning for the economy and for that segment of the economy represented by education is facilitated by a centralised system. However, two important qualifications need be introduced.

First, industrial expansion in different regions within a nation will determine how the economy of the nation as a whole develops. Similarly, manpower patterns in each region will determine how the structural changes in the economy will affect educational facilities and services in order to achieve national objectives. The experience of the Mediterranean Project has already pointed to the importance of regional considerations in national plans.[2]

Second, a vital phase of all educational programming is implementation. In some ways, a decentralised system provides an institutional structure for the implementation of national goals for education. National programming in a decentralised educational system is a multi-stage affair, and at each stage there is a feed-in of new ideas and a feed-back of reactions and issues to be resolved. The processes of discussion and the involvement of local groups in the planning in order to secure the necessary local action require public information, public debate, and persuasion of those groups whose decisions will determine the effectiveness of the action programme. The decentralised systems thus have a built-in mechanism for securing implementation ; centralised systems have to create this mechanism to assure that national planning is reflected in action programmes.

4. *Flexibility and experimentation in education*

Decentralised systems allow for a large degree of local experimentation ; conversely, centralisation produces resistance to change, if for no other reason than that prudence suggests that a centrally adopted decision wait upon a full examination of feasibility before a change is made in all school programmes throughout a nation. In assessing this problem I asked two questions : What has been the comparative experience in the introduction of new mathematics in the schools ? What is the experience with new science text books and curricula ?

The general findings on these questions, in the absence of specific data on dates of curriculum reform and proportion of high school students affected, may be summarised as follows :[1, 2, 3]

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[1] *Country Reviews* from *OECD Policies for Science and Education, op. cit.*, Yugoslavia, p. 62.

[2] The Mediterranean Regional Project, « Six Countries Introduce a Unique Method in Planning Strategy for Education », *The OECD Observer*, no. 8, February, 1964, p. 12.

a) Most of the Member nations, without regard to method of organisation or financing, report some progress toward implementation of new mathematical and scientific approaches and methods in secondary school programs.

b) In no nation has the scientific or mathematics curriculum known to be the best been introduced for all secondary school students.

c) The shortage of qualified teachers is the chief bottleneck in implementation of new curriculum. For poorer nations, lack of equipment and inadequate resources to upgrade quality are serious restraints.

d) Most of the nations, within the framework of their educational patterns, have sought to update and upgrade their mathematics and science curricula by developing new devices for working within these traditional patterns.

e) International organisations have contributed importantly by stimulating national action and providing necessary tools for curriculum reconsideration and revision.

Perhaps these last two points require some elaboration. France, despite its frequently advertised national controls over educational matters, has permitted teachers an option in adherence to old mathematics or introduction of new mathematical concepts. In the absence of governmental grants either from the central government or the cantons, the organisation of Swiss chemistry teachers adopted a programme of general chemistry topics to be introduced in the schools, leaving latitude to the teachers on implementation. The Swiss Chemical Industries have provided funds to organise teacher retraining. In Turkey, which has a centralised system of education, the government established a science high school in Ankara — a school partly financed by Ford Foundation funds — with the combined purpose of serving as a « laboratory » for the improvement of high schools in general and as a teacher training institution. The United States, while adhering to freedom of local schools, adopted a series of direct national programmes to *(a)* develop new high school text books in chemistry and mathematics ; *(b)* retrain high school teachers ; *(c)* provide summer school programmes for gifted high school students interested in science and mathematics ; *(d)* equip school science mathematics laboratories through national grants ; *(e)* develop new mathematics and science teaching aids. Belgium with about half of its secondary students in schools controlled and

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[1] *Synopsis for Modern Secondary School Mathematics.* Office for Scientific and Technical Personnel, OECD, 1960, p. 310.

[2] *School Mathematics in OEEC Countries.* Summaries. Office for Scientific Personnel, OECD, 1959, p. 116. *New Thinking in School Mathematics.* Office for Scientific and Technical Personnel, OECD, May, 1961, p. 246.

[3] *New Thinking in School Science, School Chemistry.* Directorate for Scientific Affairs, OECD, July, 1963, p. 94. *Policy for School Science,* Report on the Seminar organised by the Office for Scientific and Technical Personnel of OEEC, Istanbul, 14th to 23rd September, 1961. *Science and Education for the Future,* OECD, p. 93.

financed by the national government, experimentally created psycho-medical-social centres, under the Ministry of Education, to help identify students with scientific aptitudes and to improve both the learning and teaching processes for science education.

The launching of the first satellite galvanised the nations in the West to re-assess their scientific position. Among other things, the Directorate for Scientific Affairs was established within OEEC, later OECD, to help expand the scientific and technical capacity of the Western Member countries. Under the auspices of OECD's Directorate for Scientific Affairs, scientists, mathematicians and secondary school teachers have been brought together to assess curricula and text books in use, to develop teaching guides, to stimulate national efforts towards modernisation of school programmes, and to gain an exchange of information on text books, teaching aids, teaching methods and so forth. The impact of this OECD activity on curriculum revision is clearly reflected in the reports from the various nations on action programmes. International cooperative undertakings thus have become a new force in experimentation in education. By way of further background, curriculum in all but a few European countries is determined by the National Ministry of Education and administered and controlled by a system of inspection and national examination. In Germany and Switzerland, both countries with decentralised systems of administration and finance, each Land or Canton prescribes curriculum. The differences among the curricula of these political subdivisions, however, is reported to be small so that effectively there is a national norm in curriculum. In England, the scientific programme must meet the requirements of one of the nine examining bodies. The requirements of these bodies in reality embrace the same subject matter which is found in the « passing » and « honours » examination for entrance to institutions of higher education.

Textbook selection for most European countries is made by, or on the recommendation of, special committees of teachers. These committees are local, regional, or national. Some examples may serve to illustrate the range of procedures. In France there are no national standards ; departments in each secondary school make the decisions. For Sweden, however, a national committee, appointed for the purpose, prepares a list of approved books, from which teachers may select. General criteria are set forth in statute for textbook selection. Both in England and Switzerland the department head or headmaster selects the texts.

Reporting on a survey of practices and trends in curriculum in the schools, an OECD group concluded : « Whether there is national or local option does not appear to be a decisive factor in bringing about a reform in curriculum. »

SUMMARY

This review of secondary school policies indicates that central administration and financing are not the only routes to uniformity and equity. Nor do we find that experimentation and innovation require a decentralised system. The forces that determine educational policies and the strength of the link between these policies and national economic programming are more fundamental and more deep-rooted than patterns of administration and financing.

Secondary schooling in most European countries is changing rapidly toward free compulsory education on an almost universal basis. This movement has its origins in the political temper of the times that rejects notions that secondary and even higher education should be made dependent on financial or social position. A social revolution whose total dimensions are unknown is in progress, and it is stimulated and sustained by the requirements of a growing economy in which science and techonlogy inevitably play a large part. Instruments have been forged that can give decentralised programmes access to the fiscal resources required to achieve greater equity and uniformity, when political, social and economic forces converge to require their use. Grants-in-aid and even tax-sharing schemes are highly flexible tools of inter-governmental finance. They can be shaped in small or large sizes ; they can be designed to cover all the costs or only a negligible share. They can be used to equalise variations in local tax resources, or make more equal local tax burdens required for new programme expenditures. They can be used to shape the direction of certain educational programmes, for example, more or fewer vocational schools. Supporting grants have been given to finance all or parts of educational programmes, and in addition grants have been offered to encourage demonstration and experiments.

National funds can come to localities without strings attached, and strings that are affixed can be of various lengths and strengths to ensure academic freedom and, on the one hand, wholly local decision-making, or, on the other, specific actions required in fulfilment of national policies.

International organisations are additional instruments of government which encourage both national self-examination and innovation.

We have examined these questions and arrived at essentially a negative finding to keep superficiality of form of financing from cluttering the discussion of secondary school expansion. Nothing that has been said removes such vital problems as poor schools in poor communities when local tax resources are the only funds available for support.

There is patently an important link between the question raised earlier on the tax consequences of expanding opportunities for secondary education, and the consequences of alternative patterns of financing secondary schools for the educational programme. When school budgets are financed entirely or almost entirely out of central government revenues, we are concerned about the responsiveness of national tax yields to economic growth. In those instances in which secondary schools are financed locally, and especially where decisions to expand involve the decision to raise local tax rates, the critical issue is the responsiveness of local taxes to changes in income. This second problem must be viewed not in an aggregative way, but regionally, for not only are growth rates uneven in different places within a nation, but the same or similar tax may have different elasticity in different places because of the way in which consumption, or earnings, or property values respond to the regional pattern of growth. The extent to which new or additional national aids are required in decentralised programmes will largely depend upon the relative growth of local revenues and of school expenditures, given the projected national and regional economic development.

If we are to look to our educational authorities to produce the numbers and quality of manpower required for a growing economy, then there must be some national leadership along with concomitant assurance of financial resources to ensure that this responsibility of education to economic progress is met. There is a range of workable combinations of national government leadership, decentralised administration and finance, and individual institutional responsibility that can meet the demands of a nation for skilled and professional manpower.

Chapter 15

LOCAL AND CENTRAL GOVERNMENT PROBLEMS IN THE FINANCING OF EDUCATION

by

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PART I

THE ROLES OF LOCAL AND CENTRAL GOVERNMENTS

The subject of this paper — services and facilities of local government in the field of education and central government aid in financing these services — may be open to different interpretations.[1] In the first instance, the term « local government » may include various levels of government such as municipalities, departments, districts and provinces at the lower level, and regions and federated states such as Länder and Cantons at a higher level. What is « local » from one point of view may be considered as « central » from another.

Moreover, local governemental authorities are not always clearly distinguishable from « private » entities in the field of education (especially if these are non-profit foundations of public interest), nor from « public » independent educational entities which may be autonomous from both central and local government, but act within local competence.

Finally, the concepts of « education » and of « educational services and facilities » are in themselves ambiguous since these may include social expenditures in connection with schooling such as food, sanitary control, etc. There are also expenses favourable to productive activities not easily distinguishable from education, for example, technical assistance to industry and expenses for research undertaken by schools (such as universities) or by research institutes, which may also have training tasks. Local expenses are also incurred for such things as libraries, museums, theatres, and art, which may have, broadly speaking, an educational character but which are not strictly classifiable as « schooling ».

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[1] For the purposes of this paper, the local financing of education in Austria, Belgium, Denmark, England, France, Italy, Netherlands, Norway, Sweden, Switzerland, Germany and the United States have been taken into account.

The interventions and expenditures of local government in the educational field are large and various and in many countries they appear to be subject to continuous growth. The chief reasons for this may be listed as follows :

a) the increasing importance attributed to education and research by nearly all social classes in most countries, not only for their cultural and ethical value but as a means of achieving national economic growth and the improvement of individual earning power and social status ;

b) the fact that educational needs often belong to the group of « superior » needs, of which the income elasticity increases with the increase of income per head ; and the fact that the poorer countries often tend to simulate the richer countries in their consumption models — even when this results in extravagances such as expensive university buildings ;[1]

c) the fact that schools represent, among other things, a means of replacing family education and care of the children, leaving parents freer to earn and to spend their incomes ; this is a phenomenon typical of capitalistic society based on the division of labour, characterised by a diminishing importance of handicraft and production for one's own consumption and by standardisation of services ;

d) the fact that the cost of production in the field of educational services tends to increase relative to the costs of production of other goods, since here the law of increasing returns (with respect to scale and time) can hardly be applied. Wages of teachers tend to increase to keep up with wages in other segments of the economy where they are forced up by increased productivity. Costs of land for buildings often tend to increase as a result of metropolitan congestion ; the costs of the building industry in general have a tendency to increase relative to other costs under the pressure of wages, because of difficulties in applying large-scale production methods in this particular industry ;

e) the fact that the « productivity » of teaching is often diminishing both because good teachers appear to be increasingly scarce (due to the increased demand for educational services and for skilled personnel in every field) and because with the extension of the « right » to study, the calibre of students is decreasing and they show a more lax attitude to learning. This attitude may be understandable both since education is now a « right » and not a privilege and since for production workers also, leisure hours have increased relative to working hours ;

f) the fact that the effects of war, destruction and other factors often have made the satisfaction of these needs more difficult for the present generation ;

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[1] See Prest, Alan, ***Internal Fiscal Policies and Education Programmes in Underdeveloped Countries***, p. 11, and Lewis, A.W. ***Priorities for Educational Expansion.***

g) the fact that education is increasingly being considered as a « right », even at the higher levels, preventing local authorities from raising substantially tuition fees. The costs which must therefore be met by local authorities through their general revenues or through specific aid given by other units of government must accordingly be heavier.

All this causes an increase in the activities and in the burdens of local governments in the field of education. As a consequence, there is an increased demand for aid from the central government. This may appear somewhat paradoxical, since often it is the inadequacy of the central government's educational facilities, resulting from its financial difficulties, that forces local authorities to act more rigorously than otherwise in this field. The situation, however, is not surprising when one considers the typical process leading up to it :

a) central government does not do enough. Local governments with abundant means compensate for this inadequacy within their own areas by providing supplementary or substitute local facilities ;

b) less wealthy local governments are urged to do the same because the example of the weathier localities provides rising expectations for their inhabitants and puts pressure on their administrators to obtain similar local facilities ;

c) central government steps in with financial aid or other means to help the more needy local bodies to accomplish these tasks ;

d) since an increasing number of local governments are providing these services and asking for assistance, financial aid from central government becomes general and institutional ;

e) the final step might occur when the central government takes over all local schools and puts them under its direct administration, standardising facilities and personnel, and giving the same amount of schooling of each type uniformly throughout the country to ensure equality of treatment for all citizens. The final step in national control may be halted since :

1. With national control, local authorities will feel the central government should take more financial responsibility and therefore reduce their own contributions. Financing by fees might be considered unjustified because people will feel that they have the right to free state education. The cost to the central government, therefore, will increase, and this will decrease its enthusiasm for nationalisation.
2. Local governments may have acquired experience and prestige in performing these services, which may compare favourably, especially in the wealthier communities, with the bureaucratic inefficiencies of the central government.
3. Local communities may be unwilling to give up their autonomy and reduce the range of their activities and may fear that, with nationalisation, there might be a diminution of standards and less concurrence with local needs.

Similar developments may take place with respect to private schools, in relation both to the central and the local government. Here, there will arise additional obstacles to nationalisation. The religious issue is the first. Since many private schools are connected with a particular religion and with a particular church, their nationalisation would appear as a threat to the freedom of religion. The second obstacle is the fact that these denominational schools, more so than the local ones, are financed through tuition fees ; because of this, the central government could hardly avoid paying compensation for the expropriation of the facilities. In addition, there are arguments against any government aid to religious schools. By giving aid to schools attached to a church, the government may be accused of favouring a particular religion and of diverting resources from public non-denominational schools. Another argument against government aid is that these schools, by charging tuition fees, serve the wealthy classes. Even if, with government aid, denominational schools were to extend their services to the less wealthy, they would still be above competition with other private schools demanding the same aid. On the other hand, aid to these schools might appear justified in communities where few facilities have been provided by the government.[1]

The movement towards local schooling may result in the existence of too many small schools unable to exploit fixed costs and ensure high standards and in competition between communities, through their schools, for social rather than educational, status. Too many small local schools might also lead to an arbitrary diversification in curriculum and in possible levels of achievement which would in turn increase the difficulty of co-ordinating the higher with the lower levels of education and would, in general, discriminate against people of certain localities. These problems are especially serious in a poor country. On the other hand, centralisation and uniformity in the field of education may be equally undesirable. The dangers of national control are generally well known and need not be reviewed here. It suffices to emphasise that they are particularly serious in education, where academic freedom is essential to progress. The problem then appears to be one of achieving a balance between local and national control. Granting that a certain degree of local autonomy is desirable in education, one must determine who should provide schools, how they should be financed and, especially, what should be the role of central government. Let us begin the analysis with a review of the reasons justifying the provision of schools by local authorities.

The first general reason in favour of local provision is that local governments reflect the culture and attitudes of their communities. If one thinks that particular communities have values worth preserving for the benefit for society in general, then one will appreciate the value of locally administered schools. There are additional and more practical reasons : administrators of local schools tend to have more rapport with, and influence on, the families of the community. This influence is helpful in disciplining children and in inspiring respect for school property. Secondly, local administrators, knowing local mores and preferences, will find it easier to recruit and control teaching staff. Local authorities will normally be more capable of interpreting and forecasting local requirements in terms of the needs of local industries and the training capacities of specialised schools. Finally local autonomy in the field of education may allow various communities to devote different amounts of resources to their particular needs.

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[1] In Germany, for instance, in cases where there are not enough public schools, private primary schools recognised by the State may receive aid almost equal to that given to schools of the local communities. See UNESCO, *l'Education dans le monde : l'enseignement du premier degré*, Paris, 1960.

One may raise the objection that richer communities will then have better schools and more educational facilities, but this, to my opinion, is not a solid argument. Given that private property, market economy and income differentials exist and are a permanent characteristic of the economy, there will always be ways in which the wealthier can obtain the best for themselves and for their children. The wealthy will always have more latitude than the poor in the way they spend their money. It is unreasonable to allow the rich the right to better private commodities and to deny them the right to act collectively to provide for themselves better municipal public services. One cannot, for example, deny donors the right to leave bequests or make gifts to the local bodies for purposes of local interest. Why, then, should the legitimacy of differentials in public services among the various local communities be denied ? It is one thing to say that everyone in a country should be granted a « minimum » of a given public service and quite another to say that everyone should receive the « same amount ». Richer communities may produce a higher income per capita precisely because they are better endowed with the factors of production, furnished both privately and publicly. School facilities are among those services which are beneficial to production. The higher the income produced and spent, the greater the tax revenue, but also the greater the right to good public services. The benefit argument for taxation favours a differentiated system of local school services.

The arguments which may favour locally instead of centrally administered schools must be completed with arguments which defend local public schools against private schools, the local public school being an instrument of decentralisation and diversification in educational public services. Here, too, the issue is one of relative values and not one of choices among absolutes. There are at least three main reasons which may induce preference for public initiatives instead of private initiatives in education. The first is the suspicion that private schooling and teaching might be dominated too much by the profit motive, rendering education more vocational than academic or more interested in social distinctions than in substantial scholastic achievements. The second is the fear of excessive political power on the part of private educational institutions. A third argument may be the administrative inefficiency of subsiding private initiatives to undertake educational services and having to check their standards, techniques, costs and benefits.

This argument regarding inefficiency might be somewhat counteracted by arguments noting the inefficiency of public administration in fields where personal elements are more important than organisation and capital. Admittedly all these arguments are based on certain values and political views which might not be shared by everybody.[1] Moreover, one's attitude might differ between private « religious » schools and other private schools.

Let us now briefly examine the reasons why in the area of education a system of prices covering the full cost of the service appears generally unacceptable and why a certain amount of participation by the central government, whether through direct provision of services or through aid to schools carried on by local or other bodies, appears unavoidable.[2]

a) Education is beneficial not only to those who receive it but also to society in general, since it fosters civil, cultural, technical and scientific progress. The fruits of this progress are often non-economic values which by their nature cannot be sold, or are « external economies » which, even if of economic character, cannot be appropriated and hence sold on the market. Since ideas may benefit millions of people at the same time, increasing and not reducing the usefulness of each of the users, a price rationing to compensate in full the person who developed the ideas may entail a loss of public welfare. In this sense we have here a « public good » of the Samuelson type.

b) Even leaving aside external economies, the market alone cannot provide enough education to cover the potential demand for it, which would exist if everyone was able to forecast and to mortgage his opportunities of gain made possible by appropriate qualifications. The market is imperfect for « human capital ». (This unfortunately being true not only at an individual but also at a nation-wide level most countries cannot finance as much education as it would pay them to do on a long-term basis.)

c) In modern society, characterised by a high degree of technical skill, education appears to be one of the most powerful means of reducing or avoiding the growth of income and wealth disparities, and is one of the most powerful ways to ensure the existence of an open society with a continuous interchange among the various social and professional groups. To provide free education seems to be one of the most effective and socially productive ways for developing an economic democracy based on the equality of opportunity and hence on continuous general progress through the improvement of the competitors in the social area. (This —one must incidentally note — implies that equality of opportunity does not mean equal education.)

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[1] For a view emphasising the values of freedom of choice, individual responsibility and free enterprise in thie field of education, see the brilliant paper by Peacock, A.T. and Wiseman, J. « Education for Democrats ». Hobart Paper 25, Institute of Economic Affairs, London, 1964.

[2] Table I in Annex II indicated that in 1957 for a group of eight Western European industrialised countries, funds from general state budgets were the largest source of revenues to public education : Germany 57.6 per cent ; Austria 67.6 per cent ; Denmark 66.7 per cent ; Italy 82.4 per cent ; Netherlands 67.5 per cent ; United Kingdom 69.1 per cent ; and Sweden 59.4 per cent. Norway is the only exception, the general state budget providing only 20.8 per cent of the revenues for public education. According to this table fees and other family payments generally play a very small role : in Norway, they cover 2.8 per cent ; in Germany 2 per cent, in the United Kingdom 0.8 per cent, in the Netherlands 0.5 per cent. In Austria, together with bequests and miscellaneous minor sources, they reach 6.5 per cent.

d) Education provided for the people of each local community benefits the country at large also because of the mobility of the population.

e) In certain areas the central government might break up discriminatory monopolistic situations controlled by local bodies or by private foundations by subsidising new initiatives in that area.

PART II

CENTRAL GOVERNMENT AID TO EDUCATION

The aid of central government to local governments for education may take various forms and may have different coverage. First of all, one may distinguish the aids given from the point of view of *output,* i.e. the kind of school which is being aided : primary, secondary and high schools, technical and professional, universities and other higher education services. Taking an even more general point of view one may distinguish aids given to local authorities for nonspecific purposes (as for instance now in Great Britain) from aims specifically given for education.[1]

One may then classify the aids from the point of view of *input,* i.e., what kind of expense and for what particular aspect of the educational complex the aid is given : as teachers and other personnel, construction of buildings, teaching materials, maintenance and similar expenditures (lighting, heating, cleaning and so on) and social assistance and private expenditures by the students (books, board, commuting, etc.)[2]

Aids may further be classified according to the criteria adopted in the allocation of them among the various communities benefited. The aid may be distributed according to some index of the financial and economic needs of the communities considered, or according to indices of their potential or actual need for the service or, finally, according to the merits of their students, or some combination of these criteria.

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[1] For the British experience see Embling, J.F., « Control over Educational Expenditure in United Kingdom » in this volume.

[2] Table II in Annex II shows that in a group of nine European industrialised countries, current expenditures are normally the predominant expenditure for education. Capital expenditures consist of 23.5 per cent of the aggregate expenditure in Germany (including the service of debts) ; 11.5 per cent in Austria ; 8 per cent in Belgium ; 23.1 per cent in France and 23.6 per cent in Norway ; 21.9 per cent in the Netherlands (including debt services) ; 10.6 per cent in the United Kingdom (including debt services); 16.1 per cent in Sweden. Teacher's wages generally are the largest item of expenditure, exceeding half of the agregate expenditure or coming close to it : Germany 44.5 per cent ; Austria 53.2 per cent, Belgium 80.5 per cent : France 60.4 per cent ; Norway 52.1 per cent ; the Netherlands 57.6 per cent ; United Kingdom 45.2 per cent.

A further classification is the distinction between aid in kind and aid in money. Aid in kind includes not only the provision of goods which come under the control of the *aided* authorities (e.g. provision of teaching materials, of goods for the welfare of the pupils, and so on), but also (and more importantly) the direct provision of factors of production of the service which remain under the control of the *aiding* authority ; a typical case is the provision of teachers who are paid by, and considered employees of, the central government, and the provision of technical assistance for production of the service (this often includes inspection and control undertaken for more general reasons) or investment aid (i.e. the purchase and development of land and the building and furnishing of the schools).

Finally, aid may be distinguished according to the criterion followed in adjusting them to the items benefited (to the inputs or outputs). This criterion may be *ad valorem* (related to prices or to costs), being then a uniform percentage of the cost (or price) of the particular item considered, or a percentage varying in relation to some index (of want, of merit, of need), or covering 100 per cent of that cost (or price). Instead of being *ad valorem,* the criterion might take the form of a given sum per physical unit of input or output, again fixed or varying in relation to some index of want, merit or need. The « limit-type » of grant per physical unit is the « block grant » e.g. a lump sum given to each institution of learning. This in turn may be uniform for all institutions of a given type or may be negotiated in each case on its merits. Finally, aid may be a contribution to the principal or to the interest of the expenditure.

Tax benefits have a particular place in the methods of aid. Generally, schools of local authorities do not show a net profit, but even if they should, they, being classified as non-profit entities, are often exempted from income and corporation taxes. They are also often (but somewhat less frequently) exempted from taxes on property. The situation with regard to the various indirect taxes is more complex. These taxes include the following : the registry tax on the sale of land and on the contracts agreed with private contractors for the construction of schools, the registry (and similar) taxes on the loans issued to finance the investments and on the mortgages thereon, the sales tax on the supply of materials, and the duties or sales tax on the fuel and electricity required to operate the schools. Sometimes there are exemptions or reductions of rates for transactions affecting public schools.

Another field where there are varied solutions is that of death duties and taxes on bequests or gifts made by private individuals to schools or for related educational purposes such as fellowships, etc., and the related field of income tax deductions for such gifts made either by individuals or corporations. There is no question but that teachers must pay the personal income tax or (where it still exists) the real income tax, except the special case of foreign visiting teachers where international conventions often have some provision against double taxation. The issue of taxation on fellowships or grants given to students either by government or by other institutions is more controversial. A full review of aid in the form of tax benefits is beyond the scope of this paper since it would entail technical discussion of the definitions of the tax basis for the various forms of taxes. However, before going into a systematic analysis of the different kinds of « true » aid, (i.e. those paid directly in money or in kind), it might be useful to mention the reasons for or against the use of the « concealed » type of aid given indirectly through tax benefits.

The standard argument *against* this type of aid is precisely that it is concealed. To justify the loss of tax revenue to the Treasury, there is no clear-cut measurement of the benefits accruing to those receiving preferential tax treatment. This type of aid could even continue when the real necessity for giving it has disappeared, and thus weaken the effectiveness of the whole tax basis. Even more important, the accurate measurement of the costs of the scholastic facilities and services concerned and of the amount of resources channelled to them is rendered impossible.

The standard argument *in favour of* the tax aid is that of the simplification of procedures through the exemption of entities which, on the one hand, the state should tax and on the other hand, subsidise. This argument, however, is not equally strong. In many cases, the task of distinguishing exempted from taxable entities, transactions or items, complicates the tax administration much more than does the straightforward application of tax to each person and object included in the general definition.

Tax benefits as such are, on balance, not a superior, but rather an inferior form of aid. Their use is particularly effective only in two circumstances. The first case, although infrequent today, occurs when tax benefits are the only form of aid needed and given. Avoiding the task of administering a subsidy means a substantial gain in simplicity and smoothness in administration. The second situation in which tax benefits are desirable occurs when a public reaction is stimulated by the « announcement » of tax exemptions. It may precipitate, for instance, bequests and gifts for educational purposes made by individuals or corporations. The exemption of these gifts from death duty and income tax may be a strong incentive for giving. It is true that taxing the bequests fully and giving a subsidy to the donors in proportion to the amount of the gift or bequest would be a similar incentive. One may question the appropriateness of such incentives to the private promotion of education. Much depends on the attitude towards giving private citizens the power of allocation of resources. Personally, I am inclined to view this positively because it develops freedom of action along with altruism ; other people, however, might take an opposite view because this procedure leads to an « irregular » distribution of resources.

In examining «true» aid in money or in kind, one must begin with a consideration of the direct « output » or type of school aided. First, one may consider the primary schools. Since the need for this kind of schooling is universal in each community and the level of teaching is elementary, local governments are particularly well qualified and, indeed, better qualified than the central government, to administer these schools (See Annex I.). Attendance at these schools is generally considered a normal civil right and is often an obligation. Fees for attendance are therefore not appropriate. The whole cost of providing everyone with a minimum standard of education must be borne by the taxpayers. Since this service promotes a vital national interest, both in terms of values and in terms of external economies through the formation of human capital, (see Part I, paragraphs 1 and 2), aid from a higher central government to a local government is appropriate. (See Annex I, Note A.) This aid is justified not only in favouring those local communities which without it could not meet minimum standards of education but also in favouring all local schools in general. Once one recognises that the satisfaction of this need for primary education is in both the state and the local interest, there will be good reason for a general and permanent financing accommodation between the state and the local community. In addition to providing the essential elementary education, local communities may also provide recreational facilities, health services, and boarding facilities. For such facilities, the questions of financing obligations and methods are much more ambiguous. Of course, inasmuch as these services are conceived as a form of social assistance, fees would not be appropriate. It must be remembered that the provision of extensive forms of social assistance must be the responsibility of all taxpayers, not just the wealthy. The question then is whether the tax should be levied on a graduated scale, based on the ability to pay, at the state level, or by differentiated pricing based on benefit derived at the local level. A compromise solution might be the levying of fees, equal to a share of the cost (perhaps that of current expenses) to all but the poorer families. In arriving at such compromise solutions, one has to remember that the lower the fee charged, the easier it will be for the less wealthy to pay ; the higher the fee, the greater the incentive to widen the scope of those exempted.

As regards secondary schools, the need is less essentially local and the teaching more elaborate and complex. This is true *a fortiori* for high schools in general. Local authorities, especially those of the smaller communities, do not appear to be as well fitted for this task as governments at a higher level. These schools, therefore, are run at a regional or national level. (See Annex I, Note B.) The possible variety of these schools is greater by far than that of primary schools as the possibilities of learning, after the first basic steps, are more interesting and varied. Unlike primary schools, access to secondary schools is not thought of as an inalienable right and an absolute necessity. Thus, the obligation of the central government is reduced and a fee-type system of financing can be considered. Central government and the higher levels of local government may have the option to reinforce and develop their own secondary and high schools, rather than aid those of local communities. This, apart from other arguments, may guarantee a better distribution of these schools throughout a territory from the point of view of the State or of the region as a whole. Between secondary schools and high schools administered at the lower levels, there may be differences both in fees and in central aid depending on the universality of enrolment. The more that education after the primary school is thought of as a civil right and as a duty the government must provide, the more will the financial administration of secondary schools resemble that of primary schools. Fees for high school in many countries are extremely low or non-existent even when there exists a system of differentiated types of high schools, some of them providing better and more sophisticated teaching than others.[1]

Since the most advanced types of high school are not generally attended by the sons of persons in humbler occupations but by the sons of « white collar » workers and members of the middle class the absence of fees in these schools may be judged as a class privilege. However, by this same absence of fees, these schools may be accessible to the sons of poorer people who wish this education. In those schools where there is a fee, a method must be found for exempting the poorer families from this expense. Note, however, that universal exemption from fees for public schools may have the effect of isolating private schools which cannot afford not to charge fees. Even if fees for public schools were raised to cover full costs, one might still pursue a policy of public subsidy in the following two ways : *(a)* granting scholarships to students of merit or need or both and *(b)* sinking public funds into the general improvement of the school.

Vocational, industrial and other schools which prepare for skilled occupations must now be considered. The levels of teaching in these schools vary greatly, from simple « know-how » to sophisticated technical expertise, and include the workmen, white collar workers and those in agriculture and tertiary services. The opportunity to establish these schools will vary according to local conditions and the attitudes, traditions and needs of the communities in the various fields of economic activity and may include such fields as tourism or engineering. The local structure of the economy will have the greatest single influence on the extent and scope of these schools ; the facilities and teachers available will have the second greatest influence. Teaching in this type of school is associated with practical production tasks and business activities rather than with the abstractions. Local government, closer to the needs, habits and experience of the local population and familiar with the practical conditions of living in a particular region or area, may be better equipped to choose, organise and conduct such schools than the bureaucracy of central government. The scope for action by local authorities in this area is particularly wide. (See Annex I, Note C.)

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[1] In *Italy*, the average expenditure per pupil calculated by dividing the total appropriations in the budget of the Ministry of Public Education by the number of pupils enrolled, in the financial year 1962-63, reached 128,000 Lire for the lower secondary schools of each type and 189,000 Lire for the higher secondary schools, reaching 427,000 Lire for the higher secondary art schools. See *Relazione Generale sulla Situazione Economica del Paese*, 1963, II, p. 439, Poligrafico dello Stato, Rome, 1964.

Unfortunately, local bodies often appear reluctant to incur the high costs in this relatively new field.[1] Covering costs in this area is difficult since most students cannot afford to pay fees or even to attend these schools free of charge without being paid a wage to support their families while they qualify. Normally central governments give relatively little aid to local authorities in the field of vocational education. However, there is a good argument in favour of increased governmental aid, as these schools make the most immediate contribution to national economic growth in terms of qualified manpower and productive capacity. Also government expenditures may be justified from the point of view of equalising economic opportunity among the regions creating an atmosphere favourable to the industrialisation in less developed regions or in regions characterised by declining activities (.eg. mining or farming). In addition, expenditures in this area may ease the problem of unemployment by raising the level of skills of the labour force to fit an automated society.

Most of the potential of vocational schools needs time and a large, concentrated effort to develop. The time required may be an important reason why this potential is underrated and the pressure to develop more traditional schools seems greater.

In regard to universities and other institutions of higher learning, few local communities on the lower level have either the interest or the ability to operate them at the proper level of efficiency and seriousness. This field seems an appropriate area of responsibility for the higher levels of government (regions or federal states or the central government) and for associations of local governments of the different levels, or for institutions in which both public authorities and private interests participate. (See Annex I, Note D.) Instead of central government providing aid to local authorities for the running of this type of school, the opposite often occurs. The local authorities and bodies interested in local conditions help central governments in performing these services.[2] Often the difference in financing is not noticeable since universities and similar institutions of higher learning are usually endowed with a high degree of autonomy to assure freedom of thought.[3] Here, fees are more appropriate than in lower levels of schooling since university education is not available to all the population and since costs per student are normally greater than for other types of education. In some countries, tuition fees reach a very high level.[1] However, in spite of fees, higher education is so costly that the amount of costs to be paid by the taxpayer per student is normally greater here than for the other levels of schooling.[2] In comparing the costs to the taxpayer, one must not forget that even where the revenues from fees cover an important share of the aggregate revenue per student, a substantial part of these costs may be paid by local or national taxpayers through fellowships which they have financed.[3]

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[1] Among the positive experiences of vocational schools in Italy run by local governments is that of the Province of Treviso (near Venice), which trains the young in specialised skills mainly in four fields : engineering, electricity, electronics, chemical industry. A short reference to this experience may be found in Froio, F. *Una Scuola da rinnovare*. Edizioni Comunità, Milan, 1964, pp. 131-133.

[2] The typical way in which local governments aid the state universities in Italy is through the institution of new Chairs which are financed through annuities or a single contribution to a fund. Besides these « free » aids, in Italy municipalities and provinces are obliged by law to contribute to the current expenditures other than those for teaching.

[3] For instance, an Italian professor would not consider himself to be more free in a « free » university than in a state university. Rather the opposite is true.

PART III

FORMS OF CENTRAL GOVERNMENT AID

We shall now analyse the various types of aid given by central government to local authorities in the sphere of education, distinguishing them according to the classifications outlined in Part II. To begin with, aid may either be in kind or money. The most common example of aid in kind is the provision of teaching staff by the central government to the schools which are administered by lower levels of governments.[4] Once the central government has decided to cover in full the wage expenditures of certain kinds of local authority schools (a point which will be discussed later on), the provision of the teaching staff by the central government itself has some very positive results. These are : *(a)* to give the teaching personnel of these school the status and the career possibilities of state employees ; *(b)* to guarantee a certain level and uniformity in recruitment and in the control of the various steps in the careers of the teachers ; *(c)* to avoid excessive discrepancies in their wage treatment ; *(d)* to avoid waste of their talents ; and *(e)* to free them from local pressures. From the opposing point of view, the inflexibility of teaching bodies entails dangers of bureaucratism, of shortage of staff and indeed some disadvantages from the point of view of a national wage policy. In a country with great imbalances in the economic conditions among the various regions and communities, to have a uniform wage treatment for all teachers of a given kind (e.g. primary school teachers) often results in imbalances between the wages paid and the cost of living in an area. Wages may be too low in the expensive and crowded urban areas and relatively too high in the smaller towns and rural areas.[1]

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[1] Fees average 19.8 per cent of the sources of university income in the USA and 9.2 per cent in Britain. It should be noted that, whereas in Britain this percentage varies little among the various universities, in the USA the relative importance of fees varies greatly, from 35 per cent of the total incomes in private universities to a percentage on the British level for the State universities. See Bowen, W.G., *University Finance in Britain and in the United States ; Implications of Financing Arrangements for Educational Issues*, pp. 47 and 53.

[2] In Italy, the cost per student in the universities, calculated on the basis of appropriations in the state budget for the Ministry of Education, in 1962-63, was 279,000 Lire against 89,000 for primary education, 128,000 for lower secondary education and 189,000 for higher secondary education. See the *Relazione Generale sulla Situazione Economica del Paese* (*Op. cit.* p. 439).

[3] In Britain, about 80 per cent of first degree university students hold awards from public funds. See Bowen, W.G., *Op. cit.* p. 53.

[4] In Italy, all teachers of ordinary public schools (primary, secondary and higher education) are state employees. It is important to note that in Italy the professors of the free universities also have the status of state employees and can move to the state universities (and vice versa). For the vocational schools, the teachers are, as a rule, state employees when these schools depend directly on the Ministry of Education.

Moreover, for a central government to be responsible for a uniform teaching body which includes a very great number of teachers (as may be the case for teachers in primary schools) means that it will suffer considerable financial strain whenever state employees as a whole succeed in obtaining a general wage increase, even a modest one.[2] If teachers are officially the employees of governments at a lower level (and even if central government fully covers this expenditure), this pressure in times of general wage increases for state employees will be ruled out. If the central government reimburses the wages paid by the local governments, another danger may arise, i.e., that of irresponsible increases in wages authorised by the local authorities, on the assumption that this cost will be defrayed by the central government. This danger may be removed by the ruling that any change in wage conditions must be approved by the central government (as in England and in Norway where teachers' wages are negotiated between the state and the teachers' representatives on a nation-wide level). In this way, however, the pressure on the public budget for the improvement of teachers' wages will be general and will less easily be spread over a period of time. Note that this question may be relevant from two points of view, that of the state governments of federated states with reference to their local communities and that of central government with reference either to states or to local authorities.

Another form of aid in kind now becoming popular is technical assistance for the construction of schools. The most interesting aspect here is the opportunity of extending and disseminating new techniques of building, such as prefabrication, which may reduce costs of construction and shorten the construction period.[3]

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[1] In Italy, the disparity in purchasing power of wages between the metropolitan industrial areas of the North and the underdeveloped areas of the South created severe problems in the availability of good teachers in the large towns of the North.

[2] In Italy over the past fifteen years, most of the inflationary pressures induced in the economy by sharp increases in public expenditures are related to general increases in the wages of state employees. These increases were not always significant individually ; however, in the aggregate they placed a significantly heavy burden on state budgets. If these increases had been graduated over time, the budgets could have been better adapted to meet them. Moreover, often to meet these sudden increases in financial requirements it was necessary to resort to fragmentary tax policies complicating the tax system.

[3] In the area of technical assistance by the central government to local bodies for buildings, one of the most interesting experiences is that of the United Kingdom. See Ministry of Education, *Education in 1961, Being the Report of the Ministry of Education in England and Wales*, H.M.S.O., London, 1962. For the important French experience, see the reference on page 316, note 1.

Aid may be analysed according to the criteria adopted in allocating it among the different communities. The ideal policy, in my opinion, would be that of ensuring every community certain minimum standards and of leaving differentials of facilities and services to the communities able to devote more resources to education and of providing extra aid according to merit. The allocational formula should then combine criteria of need, merit and financial need. We have already described the arguments in support of allowing differences in school services in the local communities (especially in Part I). Let us now explain the three criteria just mentioned.

The basic criterion to measure the « need for schooling » is that of the population (the amount of children of school age as compared with the schools available) of each community.[1] The criterion of need measured by population is easy to apply in countries with a certain degree of development since there population data, even at a municipal level, are easily available and commonly employed for many other purposes. The central government might allow each community to receive aid on the basis of its population statistics. However, the community, hopeful of obtaining a greater proportion of aid, may inflate its population statistics. If, on the other hand, the central government relies solely on national census data, some injustice may be done to the rapidly growing communities, to the advantage of those of decreasing population.

Population, at any rate, is an index of « potential », but not necessarily « effective » present need. One community may be wealthier and therefore be willing to spend more on school facilities. Another, even if not particularly affluent, may appreciate more than others the benefits of education and decide to channel a larger share of its revenues in this direction. A third community may desire to emphasise a type of schooling already provided by central government aid as best suited in keeping with its particular needs and therefore be able to reduce other kinds of educational expenditures. In a fourth community, young people may be endowed with particular attitudes conducive to study and, hence, even if local government has no particular inclination, it will have to face an effective demand for educational services even larger than in other communities having the same population.

Clearly the population criterion fails to take into account all these differences in the effective need for education.

Further, one must note that present population is an index of « present » need but not necessarily one of inherited unsatisfied need. Reference to the population criterion does not clear up this question of negative « inheritance ». For formulating a specific plan other indices are preferable, such as the existing ratio of pupils per class and the ratio of pupils per room plus some examination of the existing facilities in each of the communities involved.[1]

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[1] In Italy (see Annex I, Note B) the population factor of current expenditures is employed in apportioning state aid to municipalities and to provinces. For municipalities, only the population between the ages of 6 and 14 is considered, because the largest municipal educational expenditures are for primary schools. In the case of provinces, the general population is considered. The relevant population, for the purposes of this apportioning, is that given by the last national official census.

The amount of effort channelled to education in each local community may be a better index of « effective » aggregate need (both present and inherited) than the amount of population. This effort may be measured in two ways : that of input (investments in education) and that of output (value of results). The former, input, may have *ad valorem* references ; for the latter only specific references are suitable since the value of education to a student cannot be measured in terms of the fees he may pay. Fees normally do not cover the cost of education, and have little bearing on the social value of education obtained. Moreover, aid measured by fees charged would be likely to induce the reaction of further increases in fees. Normally, for each type of schooling, aid given in proportion to fees would aggravate existing imbalances, since where fees are higher the need for aid in a given type of school[2] is normally less.

The reference to investments input will be considered later. The references to the amount of output (results) measured *in kind* will now be analysed. Here the best index is that of the number of students enrolled in each of the schools aided (one might suggest also to consider the ratio of students passed to students failed, but this criterion would precipitate a destructive reaction). Assuming a fixed price for the complete education of a student and assuming that the school is free of charge, the amount of aid needed will be in direct proportion to the number of students.[3]

One might refine this measurement of need by reference to merit. For example, one might give aid equal to the average cost of education only to those students who show a certain scholastic merit. There will then be the danger of scholastic standards being lowered so that more aid will be given. This is a particular danger when the teachers are employees of the local community being aided. Controlling this inclination would be difficult as well as expensive.

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[1] Perhaps France is the country where national planning in the educational field has been carried out in the most systematic way. Forecasts of increases in population and of demand of schooling, compared with the existing facilities, give an estimate of the needs to be satisfied according to priorities. The basic documents here are *Commissariat Général du plan d'équipement et de la productivité :* 4ème plan de développement économique et social (1962-65). *Rapport Général de la Commission de l'équipement scolaire, universitaire et sportif,* Imprimerie Nationale, Paris, 1961 and *Projet de loi portant approbation du Plan de Développement économique et social.* Assemblée Nationale, no. 1573, 3 volumes (especially part IV, les Equipements Sociaux). See also Garcia, André « *The Financing of Education under a Centralised System* », in this volume, and *The Financing of Education in France, Great Britain, Norway and Germany.*

[2] The needs are not the same for different types of schools since in the more costly types one may have higher fees which still do not cover the greater cost per pupil.

[3] A reference to pupils enrolled may present some practical difficulty as a factor of government aid. In Italy it is the law that the government must refer « to the numbers enrolled, ascertained by the Ministry of Education every three years, the 31st December of the year preceding the beginning of each three-year period » in order to give aid to the provinces.

The effect of giving schools direct aid in proportion to their enrolment is very similar to the effect of giving fellowships to the students themselves and allowing the schools to raise their tuition fee to a level sufficient to cover the costs of meritorious students. The fellowship system differs in that it gives the students and their families the illusion of a larger share of help because they receive the subsidy directly (and are thus made aware of the exact cost incurred by the government in providing them with this free educational service). Of course, fellowships may exceed (and now often do exceed) the amount of tuition costs in order to provide the students with an extra « wage » for their other expenses. But the central government could, conceiveably, obtain the same results through a scheme of subsidies paid directly to schools and through influencing the schools to pay a wage to those enrolled.

The advantage of direct aid to schools over aid to families is that administrative problems are simplified. Controlling the spending of government funds would be much easier through schools than through families which, in some cases, may be illiterate and very often are in need of money. This advantage is particularly pertinent to under-developed countries.[1]

When aid is determined by enrolment, capital costs will be averaged and paid in general : particular interest and depreciation charges will not be covered. On the other hand, if aid is determined and paid on the basis of costs, it will be paid when expenses, whether current or capital, are incurred. Government might not cover general capital expenses but pay periodic interest and amortisation costs : this method resembles that of giving a sum per enrolled. But a central government payment of interest and of amortisation means that the local authority can obtain a loan on better conditions. When the local authority obtains aid based on enrolment figures there is no direct intervention of the central government in the service of loans, and therefore more difficult to obtain loans. The value of aid based on enrolment would be increased considerably if it were possible to apply future aid revenue as collateral for loans taken to cover the investment expenditures.

Let us look at the indices of financial need which may be employed to determine the distribution of aid among the various communities. Here two main indices emerge : tax yields per capita and income per capita.

As tax yield per capita, one might choose either local taxes (including those taxes levied by other units of government and directed back to the locality) or direct national taxes. The « local » revenue per capita is an immediate index of the financial strength

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1. The proposal of Peacock and Wiseman of giving each student not only a grant but the right to choose the educational institution he prefers, differs sharply from the system of giving aid, proportionate to the number of those enrolled, only to the schools of local governments.

2. For further discussion on the difficulties of administering a scheme of grants (in under-developed countries) paid directly to the students or to their families, see Prest, Alan, *Op. cit.* Part III, para. 4.

of the local government considered, since it indicates how close the government is to incurring deficits.[1] However, a low revenue shown on this index, favouring the local governments for national aid, may be a result of loose tax administration and reluctant taxpayers. At any rate, the revenues of local governments are an index of « their » financial conditions, but not necessarily of that of their inhabitants. This discrepancy may be particularly important when local revenues consist only of taxes collected on a limited base and a share of the taxes collected elsewhere and apportioned to the various communities according to criteria different from that of the wealth of their inhabitants.

Referring directly to income per capita is obviously the best way to ascertain the economic conditions of the population. This is an appropriate means of ascertaining economic differences between regions or states. However, this measurement is not taken directly on the local level. To calculate income per capita on the local level one must consult whatever data are available on that level, such as the consumption rates on selected commodities (electricity, automobiles) or data on some national income tax.[2]

Where personal income tax is well established and well run, its revenue may be the best indirect index of income per capita in each local community, provided that the statistics of its local yield seem relevant.[3] Where the implementation of personal income tax is seriously defective, as in Italy, it is not an accurate index of income per capita, since the wealthy receive preferential treatment. In this case, the yield per capita of all the direct taxes levied by the central government might be a better index, even if the problem then arises of revenues collected on the profits of enterprises whose headquarters are in one place and plants in others.

Aid may be analysed according to the inputs aided. A major breakdown of this type of classification is that between concentrating on a single type of input and/or giving percentage aids toward many types of inputs. In the analysis of the first alternative, the chief choice is between financing personnel expenditures and financing the construction of buildings, the first being the most typical aid to current expenditures and the second the most typical aid to capital expenditures. The prevalent choice of aid covering the cost of personnel may be explained by the urgency of these expenditures and by the fact that local governments cannot usually have recourse to financing personnel expenditures through public debts or by other extraordinary means.[1]

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[1] The reliability of local tax revenue in terms of an equalisation policy is extensively studied by Philips, Kjeld, in *Intergovernmental Fiscal Relations*, Institute of Economics and History, Copenhagen, 1954, p. 124 and following.

[2] In Italy, there are well-known indices of the income of each province, prepared annually by Tagliacarne, G. and published in the review *Moneta e Credito*.

[3] In Sweden, according to Philips, Kjeld, (*Ibid.*, p. 158 and following), figures on income per capita in a community, as determined by a graduated national income tax, are used to determine the percentage of state aid to be given for capital expenditures in schools. Philips believes that these figures are not a fair criterion for aid since some communities have a high income average only because they have a few wealthy families.

From a national point of view, there may be much sense in this preference for aid covering the cost of personnel (mostly teachers' salaries), since there is a logical priority for teachers over buildings. Accommodation for schools may often be found by using the various expedients of two shifts of students in the existing facilities, maintaining old buildings, or using buildings not expressly built to serve as schools.[2] Aid for the construction of new schools would no doubt help alleviate some distressing situations, but it might tend to place an undue emphasis on the context rather than the content of education. For most countries the « ideal school building » would be an unnecessary extravagance. On the other hand, aid for the wages of teachers may inflate them to such an extent that they, too, appear a « luxury » even if one remembers that it takes good salaries to attract enough good people to the teaching profession. To be sure, a good teacher in a bad school building may provide better education than a bad teacher in an elegant, spacious, modern school complete with all possible new teaching material and gadgets.

Money needed for current expenditures, such as wages and maintenance, remains fairly constant over the years. Money needed for capital expenditures is periodic and of fluctuating amount. It is administratively easier for the government working on a yearly budget to give aid to current expenditures.[3] With the institution of long-range programmes of financial planning, aid for capital expenditures is gaining momentum (see Annex I, Note E).

The appropriate method of aid differs between rich and poor communities, *caeteris paribus*. Poor communities prefer aid for current fixed expenditures because they must be paid immediately, whereas capital expenditures can be delayed. However, the poorer communities would benefit the most from aid to capital expenditures given on the basis of the need of them measured on some objective index for the very reason that they tend to put off these outlays.

From the point of view of general fiscal policy, aid from central government for the construction of schools should be appreciated for its effect on aggregate demand. The expenditures of the local government for capital goods follow and accelerate the conditions of the market. Central government expenditures can be used as a fiscal tool of stabilisation policy.[4]

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[1] For further references to the distribution of aid for the costs of the personnel, see Appendix I, Notes B and D.

[2] To exploit existing school facilities, one might consider not only a longer school day but a longer school year. Summer courses in professional fields might be of particular value. This arrangement would require considerable co-operation among the various State and local administrations.

[3] The central government may choose to give grants for particular current expenditures related to schools where the grant would also benefit some flagging sector of the economy. For instance, by providing free milk to schools, the government would benefit farmers by sustaining the price of milk and guaranteeing a market.

[4] Supplementary to the comments made in Annex I, Note E, my contribution on « Fiscal Structures and Regional Development » to the OECD Conference in Athens develops a general analysis on these issues.

If central government has a medium or long-term programme of expenditures for school buildings, this will facilitate the inclusion in the frame of a stabilisation policy of local building projects since the local government can accept a delay more easily than an outright refusal.

As already noted, good teaching in run-down buildings is preferable to bad teaching in modern buildings. However, one is not usually presented with an « all or nothing » choice between good teachers or good buildings. The question is one of apportioning expenditures on the basis of relative needs as between teachers and buildings. In measuring the relative need for new buildings, one should consider not only the condition of the rooms but the number of pupils to a classroom.[1] In measuring the relative need for improving teaching staff, one should consider both the relative value of more teachers and teachers of higher quality. One must also remember that buildings and teachers are not only rival but also complementary goods. More teachers might be of limited usefulness if there is no room to accommodate more teachers. Assuming there are enough rooms, additions to the teaching staff would mean that classes could be both smaller and of longer duration. Authorities must weight these alternatives in deciding how their aids would have the greatest effect.

Continuing the analysis of aid according to inputs, one must note that in addition to, or instead of, aiding local authorities in expenditures for buildings or teachers, the central government may aid the families of students. A common way in which the government aids students is by giving them fare rebates on state railways as is done in Italy, France and Germany. (This practice may be also in the government's interest since it serves to encourage traffic on the railways.)

Another and more recent form of aid to students and their families is the provision of free textbooks. This type of aid is particularly appropriate for children at the compulsory level, since in this case textbooks are an inescapable expense to the families.[2]

There is little danger that the government, through buying textbooks, will interfere in the selection of books, or in choice of publisher. Textbooks are chosen by teachers and chairmen of school boards. The publisher is concerned only with selling a certain number of books, not with who pays. Government provision of free textbooks will be to the advantage of the publisher, since there will no longer be a market for used textbooks. The provision of free textbooks may have the further effect of encouraging innovation and variation in textbooks. Publishers will be likely to press for changes, and families will be unlikely to resist change since they have nothing to lose. Given all these pressures to take adavantage of government-sponsored free textbooks, the government will need to protect itself by price control.

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[1] I have tried to develop ordinal methods and scales based on scores for the assessment of the social gains resulting from public expenditures, particularly in the field of social capital, in a number of papers now collected (with others) in my book, *Saggi di Economia Urbanistica*, Morano, Naples, 1964. Some application of the methods described has been made in urban planning studies for the metropolitan areas of Turin and Milan.

[2] In Italy, providing free textbooks for the primary schools was initiated experimentally three years ago. There is now some controversy on this question.

Instead of giving specific aid for specific commodities, central government may choose to help the students and their families by providing them with a subsidy to be spent at their discretion.[1] The larger the amount of aid available to students, the more reasonable is a direct subsidy. This approach simplifies administration on the government level in comparison with aids for specific expenses, but gives the families more latitude in their choice of expenditures. The difficulty with this approach is that the government has no assurance that the money is in fact spent for educational purposes. Supervision of the spending would be next to impossible. This type of aid would probably be more practicable if given to older, more responsible students at higher levels of education, especially if it is given on the basis of scholastic achievement.[2]

Aids may cover 100 per cent of the cost or be percentage grants. When aids are *ad valorem* and have 100 per cent coverage, some « price control » is necessary. Upper limits should be placed on teachers' salaries, prices of land and interest on loans. Even when the government contributes a substantial share of the costs incurred some price control may be useful to avoid wastage.[3]

The central government could also set a limit to its cost coverage. Any expenses exceeding this limit would have to be paid by the local authorities. This procedure would encourage the local authorities to live within the central government's limit. The opposite method of giving a « deficiency grant » covering the gap between the resources of the local school and its expenditures might prove dangerous unless there is strict control of the costs for which aid is to be granted. In general, the system of covering a limited share of all costs seems more efficient than (nearly) completely covering only a certain item of costs. However, there are some who would argue that certain items should have priority over others, even if they cause some extravagance. Another possibility is to pay for « standard costs » only.[1]

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[1] Since the academic year 1963-64, a so-called « pre-salary » has been introduced for all university students in Italy. Any student may receive this subsidy under two conditions : that he obtain grades above a certain level in his examinations, and that his family — according to the income tax returns — have an income below a certain level. Students having to travel far to the university receive a larger subsidy. To date, only a very limited number of students have succeeded in fulfilling the conditions entitling them to the subsidy (chiefly because the grades required are high and must be obtained for all the courses in the official curriculum for each year). As a result, the aid has been much less effective than had been hoped. This failure, of course, saves the state a substantial financial outlay.

[2] Fellowship money, then, may also be used by the students for boarding expenses. Another possibility would be to give the students board fellowships that might be convertible into money grants. On student aid in general, and particularly with reference to Germany, France, and Great Britain, see Edding, F., « Student Aid » in this volume.

[3] For a criticism of the grant system as a percentage of teachers' salaries see Eide, « Budgetary Control and Yardsticks for Assessing Educational Expenditure in Norway », in this volume, and of the grant system as a percentage of costs in general, Embling, *op. cit.*, p. 26.

The central government may find it less wasteful and more efficient to pay its predetermined share of standard costs in a fixed sum at regular intervals. But this procedure must be up-dated periodically to adjust to rises in costs. This up-dating provides an opportunity for inquiring into cost conditions and ways of economising.

As said, aids may be *ad valorem* or specific. Given different costs in different areas, it might be preferable to give aid on an *ad valorem* basis : although high prices often indicate high incomes, they are no guarantee of high revenues for the local authorities. It is also true that aid given on an *ad valorem* basis might have the effect of encouraging quality over the quantitative spread of the benefits of education and result in smaller and fewer schools. However, it is difficult to judge whether this is « wasteful » without considering the values and the aims that one wants to pursue.

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[1] On the standard costs method » see Eide, K., *op cit.* with reference to the interesting Norwegian system of grants.

Annex I

THE FINANCING OF EDUCATION : PRIMARY, SECONDARY, VOCATIONAL, HIGHER

In several European industrialised countries, primary schools absorb the largest part of the current expenditures on education. For the nine countries considered in Table III (see Annex II) the highest percentage (including pre-school education) is that of Sweden (58.9 per cent), followed by Norway (55.6 per cent), France (48.1 per cent), Germany (49.3 per cent). In the United Kingdom, the percentage is somewhat smaller for primary schools (31.2 per cent) but is still larger than the share of the secondary « general » schools (27.8 per cent). In Austria, although primary education absorbs a smaller percentage (28.1 per cent) than secondary schools considered as a whole (40.2 per cent), it still surpasses that of secondary « general » education (22 per cent as against 28.1 per cent). In the Netherlands, the percentage of current expenditures spent on primary education (exclusive of pre-school-education) approximates that of secondary education as a whole (40.8 per cent as against 37.5 per cent). But primary education, again has a larger share than « general » secondary education (40 per cent as against 19.4 per cent). Even in the Netherlands the expenditures on primary schools, including pre-school education, exceed significantly those of secondary schools (45.2 per cent as against 37.5 per cent). In Belgium, the percentage given to secondary education as a whole exceeds that of primary education including pre-school education (46.7 per cent as against 37.9 per cent). But the share for « general » secondary schools' expenditures even in this country is much lower than that of primary schools (23.3 per cent as against 37.9 per cent).

Public primary education is generally run by the lower levels of government (municipalities, counties, districts, departments and the like). The following countries are examples : Germany, France, Norway, Italy, Denmark, Sweden, England, Austria, United States. This is largely true also in Switzerland, Belgium, the Netherlands, Poland, the Eastern Zone of Germany. In some of these countries there are special local organisations concerned with the schools : in Germany, for example, the Schulträger (associations formed by municipalities, associations of municipalities, associations of miscellaneous entities). In the Unites States, there are the « school districts » presided over by an elected « school board ».

A. PRIMARY EDUCATION

In *Germany,* the Länder normally aid the local communities (Schulträger) for primary education, donating a lump sum per student enrolled, to pay for teaching materials and maintenance. They also contribute a share (sometimes a very large one) towards the construction and equipment of school buildings. Several Länder are obliged by law to pay personnel expenses, while the Schulträger are legally obliged to pay construction and equipment costs. Generally speaking, however, the Länder contribute to building and equipment, and may, under certain conditions, require the Schulträger to contribute to salaries.

In *France,* the central government covers all the salary expenditures connected with primary schools. On the basis of the number of students enrolled it also aids departments and municipalities in the improvement of teaching materials and equipment, and to some extent it contributes to construction costs. It aids construction and maintenance even when municipalities are legally bound to cover these expenses. The extent of this aid, determined by the magnitude of the construction projects and an index to the communities' financial resources, may be as high as 85 per cent of costs. Finally, the state contributes to educational materials by giving free records, films and books to the primary schools. Municipalities must pay for housing accommodation of the teaching and administrative staff of the primary schools.

In *Norway,* the municipalities are responsible for building, equipping and maintaining primary schools. The provinces help the rural districts in covering these expenses. The state is responsible for 30 to 85 per cent of teachers' wages and of transport and accommodation costs for pupils, calculated on « standard costs basis ». On average 60 - 65 per cent of these expenditures are refunded. The grant varies according to the local fiscal capacity and the special educational tasks facing the various local communities to be aided. Equipment expenditures are subsidised on a smaller scale through a sum per pupil. The costs of construction of schools are aided by the state both with grants given according to the needs of each individual case (on average some 20 per cent of these costs are covered in this way) and through loans of the Government Bank.

In *Switzerland,* the burden of expenditures for primary schools falls principally on the Cantons. The federal government also makes a contribution on the basis of the number of students from 7-15 years of age. To the basic subsidy of four francs per student, a supplement of eight francs is added for students in the « mountain » Cantons. A further supplement is added for those areas having linguistic difficulties (i.e. Tessin, where the language is Italian and Graubünden, where the language is « Romansh »). For Tessin a « linguistic » supplement of 15 francs is given for each Italian-speaking student and for Graubünden a supplement of 15 francs for each Romansh-speaking student. Of the basic aid given to the Cantons, 10 per cent must be devoted to the education of mentally retarded or invalid children.

In *Belgium*, the central government pays in full the wages of the personnel of all the local schools. It also contributes to expenditures for the purchase of land, buildings, furniture and teaching equipment for the schools of the municipalities and provinces. The aid is equal to 30 per cent of the cost for municipal schools and to 70 per cent of the cost for the schools of the provinces. In turn, the provinces contribute to the maintenance and other current expenditures of the schools of the municipalities (such as the supply of materials to pupils) and give aid to the « recognised » and to the « recognisable » private schools. Both « recognised » and « recognisable » private schools fulfil certain conditions of state law. (Private schools are « recognised » only when they receive aid from local authorities). The state generally contributes half of the wages bill to both the « recognised » and « recognisable » private schools.

In *Denmark*, the state gives considerable aid towards the training of personnel for the primary schools. In this connection, it covers half of the expenses undertaken by local authorities and half of the administrative expenses of the departments. The local governments are legally responsible for the building, equipping and maintaining of primary schools, but the central government grants aid which covers nearly 60 per cent of these expenditures. Private primary schools, meeting certain teaching and equipment standards, may receive state aid covering up to 50 per cent of their staff's wages.

In *Sweden* the state contributes a large amount towards the expenditures of the primary schools of the municipalities. It pays in full the wages of the regular teaching staff. The state further guarantees 78 per cent of the cost of wages for teachers giving vocational training. For wages of administrative and supervisory personnel, the state pays half of the minimum cost to local educational authorities. This minimum cost is a fixed sum determined by the size of the district in question and by the prescribed rates for inspectors and school administrators.

Fringe benefits for personnel are paid by the municipalities and the state reimburses a share of them. The municipalities organise and administer the transport service for pupils living in isolated places, and costs are paid in part by a state subsidy. The municipalities provide free meals to pupils and the state reimburses the municipalities according to their financial resources. The pupils coming from places not under the jurisdiction of local authorities receive state aid covering 100 per cent of their costs. For medical care, state aid takes the form of a given lump sum for each school doctor and another lump sum for each nurse. To cover the cost of textbooks, the state gives to every school a lump sum determined by the number of pupils at that school. Each school, then, can provide free textbooks. The state covers 35-40 per cent of the investment expenditure undertaken by the local authorities and 50 per cent of the school rent expenditure undertaken by the municipalities. Finally, the state gives aid for such miscellaneous expenses as the housing of personnel, extra courses, certain school materials, and upkeep of old buildings. The state aids private primary schools by covering 60 per cent, and in particular cases, 75 per cent of the salaries of teachers.

In the *Netherlands* the state fully reimburses both public schools (chiefly municipal) and private schools, for teachers' salaries which are paid on a scale according to the size and number of classes taught. Municipalities pay the construction, maintenance, equipment and related costs of both the public and private primary schools and give extra aid for special schools such as those for mentally retarded children. Municipalities are fully reimbursed by the state for those expenses pertaining to primary schools fulfilling certain legal requirements.

In *Britain* the state contributes to a very large percentage of the expenditures or primary education made directly by the Local Education Authorities (the counties). The aid before a reform of 1959-60 a new system of non-specific grants has been introduced under which countries and county boroughs receive a sum determined by certain factors (population, school population, young children, old people, decline in population, sparsity of population, etc.) which they may spend for any purpose, but which in fact is devoted, to a large extent, to education. The state, furthermore, covers most of the expenditures incurred by the LEA for free milk and subsidised meals. In turn, the LEA have the task of aiding the private « voluntary » schools with both their teaching expenditures and construction costs. There is extensive control by the central government, not only of educational standards, but also of the costs incurred by the local authorities for staff and the construction of buildings.

In *Italy* the central government entirely pays for the teaching staff of primary schools (they are state employees) and contributes to the financing of investments in school buildings (construction and improvements) undertaken by the municipalities. According to the law of 1954 pertaining to primary schools, this contribution, when given, towards investments is 6 per cent of those planned over a 35-year period for areas of low economic development, such as Southern Italy, and 5 per cent of those undertaken in other areas. A substantial part of the investment projects remains unaided and this aid is considered scarcely effective. The same law allows for aid to current expenditures undertaken by the municipalities in the educational field. The sum, appropriated yearly in the state budget, is distributed half on the basis of the school age population (6 to 14 ½ years old) and half on the basis of enrolment figures in a municipality. Under a recent law, the state provides free textbooks for all primary school pupils. Apart from investments and teachers' salaries, municipalities must cover the other current expenses.

In *Austria* the wages of the teachers in municipal primary schools are covered by the Federal Government, but the government has the right to refuse to pay the salaries of those teachers who instruct fewer than 30 students. The Federal Government does not provide aid for expenditures on the construction and renewal of municipal schools. The Länder, however, aid the municipalities in this field both by grants and by interest-free loans.

B. SECONDARY EDUCATION

In *France* secondary education is provided by municipal departmental and state schools. Since the teachers in general and technical secondary schools are considered state employees, their salaries are paid entirely by the state. There are state Lycées which are autonomous institutions within the national system with individual budgets to which the state contributes substantially. There are also nationalised Lycées financed from the state budget with some contributions for the municipalities. Before 1955, as a rule, municipal Lycées had no separate budget and their financing came within the general budget of the municipalities (or, in very particular cases, of the departments). After a law was passed in 1955 municipal Lycées became autonomous institutions with individual budgets, to which the municipalities and departments contribute a share. Technical institutes may be administered by the state or by the municipalities or by the departments. The buildings of public secondary schools usually belong to the municipalities and occasionally to the departments ; these local authorities must provide both for their construction and for their normal maintenance. The state, however, contributes to extraordinary repairs and new construction at a percentage varying between 50 and 75 per cent of the cost.

It is quite common for pupils to board in French secondary schools. The fees for boarding, however, are often below the aggregate average costs.

In *Germany* secondary schools are the concern of the Länder and of the local authorities. They contribute jointly and in various proportions to the expenses of these schools through payments to autonomous funds set up for this purpose at the local level.

In *Norway* secondary schools of lower level are normally run by the municipalities ; secondary schools at the higher level (16-18 years — the gymnasia) are normally run by the counties. A few gymnasia, however are still run by the communes. The central government intervenes by establishing its own secondary schools for handicapped children. The state contributes to the « continuation » municipal schools by paying a share of the salaries of the teachers — 17.5 per cent in rural areas, 35.5 per cent in towns, covering a share of other expenditures and giving some aid for investments in buildings and facilities. The « real skoler » of the municipalities receive from the state a lump sum per class and the gymnasia receive a refund from the state of 30.75 per cent of their standard costs per pupil. Grants for the construction of gymnasia are given, under a country-wide plan, by the central government.

In *Switzerland* the regular secondary schools at different levels are run by the Cantons through a director assisted by councils nominated by the municipalities concerned (the municipality where the school is located normally has a majority of delegates). Professional schools are also under the administration of the Cantons but representatives of the associations of employers and of the unions are represented on their councils. The Cantons and some urban municipalities aid professional schools. Municipalities finance in part the construction, maintenance and teaching expenditures of the ordinary secondary schools ; the Cantons pay for another part of these expenditures, with particular attention to the gymnasia which also receive federal aid. The Cantons pay between 20 per cent and 70 per cent of the teachers' salaries for municipal schools, the amount depending on the financial conditions of the municipality. The Cantons also contribute up to 60 per cent of the construction costs of the municipalities, the amount depending both on the type of school and the financial situation of the municipality. Municipalities finance their part of construction expenditures through general revenues and sometimes through fees or a special tax collected for the purpose. The schools are, of course, aided in general by their permanent endowments.

In *Italy* secondary public schools are, as a rule, run by the state. The state provides fully for the salaries of teachers, who are state employees, and for the administrative staff, inspectors and directors. For technical secondary schools and scientific lycées, the provinces are responsible for construction, furniture, equipment and maintenance of buildings as well as the wages to be paid to secretaries, assistants, and school attendants. For the regular secondary schools it is the rule that municipalities must pay for these same expenses. For capital investments, the state gives both the municipalities and the provinces a contribution of 4 per cent of their costs for 35 years. Here also the amount of unaided investment projects is very large. For other expenditures, the provinces receive aid based on one-fourth of their population and for three-fourths of the students enrolled.

In *Belgium* secondary schools are run by the state, by the provinces and by municipalities. There are also many private « free » secondary schools aided under certain conditions by the state. All the secondary schools aided by the state (whether local or free) have the salaries of personnel fully paid by the state. An aid covering 60 per cent of the cost of teaching materials is also given. Furthermore for these schools, the state provides aid in the following way : 3250 francs (in 1955) for each pupil enrolled in the « medium » schools, 3750 francs for each pupil enrolled in the « normal » schools, and 3250-4250 francs for each pupil enrolled in the technical schools. Finally, the state contributes a share of 30 per cent for the municipalities and of 60 per cent for the provinces towards the costs of construction and renewal of buildings and the purchase of land for new schools.

In *Denmark* public secondary schools are run as a rule by the municipalities. However, there are also state secondary schools (chiefly gymnasia). For capital expenditures for gymnasia the state covers 25 per cent of the cost and the municipality 75 per cent. For current expenditures, the state covers 90 per cent and the municipality 10 per cent. « Medium » schools of the municipalities receive aid from the state equal to 85 per cent of the wages paid to the teachers ; commercial schools receive 48 per cent of the amount of teachers' salaires. Technical schools are aided by the state in an amount up to 60 per cent of the approved expenditures relating to rooms, teachers' wages and teaching materials. Private secondary schools are subsidised by the state, which contributes up to 85 per cent of teachers' wages plus a lump sum for each school. New schools and evening schools of the municipalities receive state aid and aid from the counties equal to 66 per cent of the wages paid to their teachers. For new schools, the state also pays a substantial share of the boarding expenditure.

In *Sweden* the public secondary schools are run by the state or by the municipalities. Municipal schools receive around 50 per cent of their teaching expenditures, this aid depending on complex distributional indices. Maintenance costs are legally the responsibility of the authority to which the school belongs, but for the gymnasia and technical high schools the municipalities must fully cover the costs. For the technical high schools, the state covers the teaching expenditures. The state gives aid ranging from 35 per cent to 40 per cent of the investment expenditures for school buildings constructed by the local authorities. Aid is also given for the current expenditures of the private secondary schools up to 60 per cent.

In the *Netherlands* secondary public schools coexist with an important sector of private schools. The public schools are either state or local authority establishments. The local authorities cover the wages and the other current expenditures of their own ordinary secondary schools, but for many of these schools the municipalities are entitled to receive aid covering a share of their expenses. For the « complementary secondary schools » the state pays the teachers. The state covers the equipment expenditures for the commercial schools of the local authorities and subscribes up to 50 per cent for other current expenditures. Aid from the state for technical schools reaches 70-75 per cent. Finally, for the « normal » schools, the state provides full reimbursement of the salaries paid to the teachers and covers expenditures relating to maintenance, equipment, furnishing and teaching materials. Private schools are given aid almost similar to that given to schools belonging to the local authorities.

In *Britain* the Local Educational Authorities (LEA) also run secondary schools. There is a large sector of private secondary schools. The LEA are entitled to utilise free of charge 25 per cent of the places available in the state-aided private secondary schools in order to provide free education for pupils who have attended for at least two years a state-aided primary school. The LEA may further utilise another 25 per cent of the places in private schools for students who did not attend aided primary private school (or who attended for less than two years), but in this case they must reimburse the full tuition fees for these pupils. The central government covers a very large part of the expenditure for secondary education undertaken by the LEA through its system of « general grants » given to the countries and county boroughs, as explained above. The LEA have also the responsibility of providing for « further » education, outside the universities, whether through their own schools or aided private schools. This kind of education may receive particular aid from the state.

In *Austria* the teaching and administrative expenditures of all the secondary public schools are fully covered by the Federal Government, plus the investment expenditures of most of these schools. Administratively, secondary public schools are chiefly dependent on the Länder, under the final control of the Federal Government. Teaching materials are usually provided by the Länder.

C. VOCATIONAL EDUCATION

A review of the administrative and financing systems of vocational education at various levels and in different countries does not come within the scope of this paper. The matter is enormously complicated by the fact that in various countries quite different authorities have competences in this field. The range includes such Ministries of Education as those of Industry, of Agriculture, of Health, of Technology, of Defense, and even the Ministry of Justice for juvenile delinquents and former prisoners. In addition to this complication, there is no clear dividing line between vocational schools, the secondary schools proper and the universities. One country with considerably developed participation by local bodies in this field is Sweden. Here, there are vocational schools run by the municipalities, by counties and by groups of counties or municipalities. « Central » vocational schools (run by the counties) are subsidised up to 100 per cent for the cost of teachers and the municipal schools up to 78 per cent. State provision for teaching materials is at 50 per cent of the cost for the municipal schools, and 90 per cent of the cost for the « central » schools. Some municipal schools are aided up to 66 per cent for these expenditures. Other aid is given by the central government, in the form of lump sums, towards other expenditures in all of these schools. The state also provides aid for investments in buildings.

Another country where local authorities play a major role in vocational education is Norway. These schools are aided by the Central Government according to the same rules as gymnasia (see above). Furthermore grants are given for equipment in connection with the building of new schools.

There are countries where the emphasis in vocational education is on the promotion and dissemination of technical progress for increasing productivity and modernising the already « mature » economy. In other countries, where the problem of building a fully developed economy with full employment is still an important factor, the emphasis is on providing people with basic industrial skills, on teaching farmers the techniques of capital-intensive agriculture, and on creating a modern class of entrepreneurs, Britain is a good example of the first approach ; Italy with its dual economy tries to pursue both the second and (more recently) the first approach.

D. HIGHER EDUCATION

In *Germany* universities are either under the control of the Länder or are private foundations (as the Universities of Cologne and Frankfurt-am-Main). The Land, as a rule, pays the salaries of staff and aids the local communities which are responsible for most of the other current expenditure.

In *Sweden* universities are autonomous entities, under the supervision of the Ministry of Education. Some of them (as Upsala and Lund Universities and some Specialised Institutions of Higher Education) are completely financed by the central government. Some others, as the Universities of Goeteborg and Stockholm, including the Higher Schools of Commerce in these two towns, receive aid from both the state and the interested municipalities.

In the *Netherlands* there are six universities and five Higher Institutes of Education at post-secondary school level. Three universities belong to the state, one is municipal and two are « free » (private) religious institutions (one Catholic and the other Calvinist). Three of the Higher Institutes of Education are state-owned and two are private. Amsterdam finances its municipal university. The private universities receive grants by the state on a scale determined by the costs of the state universities.

In *England* the universities are autonomous and generally very well endowed. The central government provides two-thirds of their current incomes by direct aid, largely in the form of block grants. Other aid is given through non-recurrent grants for the provision of buildings and equipment, according to the priorities established by the University Grants Committee. Local grants cover about 2 per cent of the current income of universities.

In *Belgium* the universities belong to the state or are private. The state is the main source of financial help for the free universities (Brussels and Louvain).

In *Switzerland* the Federation administers the Federal Polytechnic University of Zurich, provides aid for the teaching of economic and commercial sciences in other universities, and further aids other particular types of teaching. The Cantons administer and finance their own universities. There are no private universities or universities belonging to the local government bodies, with the exception of Saint Gall, jointly run by the Canton and the municipality of Saint Gall. The Federation does not provide regular and general aid to the universities, but such aid is now being debated and has been recommended by a Federal Commission. See *Rapport de la Commission Fédérale d'Experts pour l'étude d'une aide aux universités*, Département Fédéral de l'Intérieur, Berne, 1964.

In *Denmark* state universities are completely financed by central government. The University of Aarhus is partly municipal and partly private and is financed by contributions from the municipality, private donors, its own particular patrimony, and aid from the state. Teaching and administration costs are largely paid by the state. The state, together with the municipality and some private sources, contributes to the cost of new buildings. There are many Institutes of Higher Learning, all of them under the control of the state which provides the bulk of their finance.

In *Italy* most universities belong to the State. Their budgets are autonomous from that of the state, but the bulk of their finance, both for current and for capital expenditures, is provided by the state (besides fees, gifts and aid from the local governments). There are three private universities : a Catholic university and a private Business School in Milan and the University of Urbino. These independent universities are financed through their own sources, by fees, with some state aid (particularly for building) and with minor aid from the local authorities.

In *Norway,* the main universities (three, while a fourth is being planned) belong to the state and are nearly completely financed by it. There is also a private university. There exist also four institutions for specialised training at university level run and financed by the State.

In the *United States* the main universities either belong to the different States or are private entities. There are also a number of municipal universities and some which are controlled by districts. The Federal Government and the States give considerable financial aid to all universities. The grants of the Federal Government (in 1957-58) represented 22.6 per cent of the aggregate incomes of the universities ; those of the States accounted for 39.1 per cent ; local governments contributed another 1.4 per cent.

E. FINANCING METHODS IN ITALY

Italy is now entering the field of systematic planning of educational facilities and services. The first results at the preparatory level are assembled in two monumental books published by the Ministry of Education : *Relazione della Commissione di Indagine sullo stato e sullo sviluppo della pubblica instruzione in Italia,* Rome, 1964. The formulation of rational policy in this area in Italy is greatly impared by the method used to aid local communities in financing their investments. As we have seen, the normal method is that of paying an annuity for 35 years. Many projects remain unaided, or must wait many years passing through a costly and slow procedure. This annuity is normally employed by the local governments to pay a share of the interest and reimbursements on the debt issued to finance the investment. It should be noted that, due to the large deficit of the public sector taken as a whole and to the difficulties of the bond market related to this fact, local governments, in spite of central government aid, find it very difficult to cover interest on loans and often are forced to forego the loan. Moreover — and this in my opinion is even more important — since local communities resort to debt finance for their investments (and are encouraged to do so by the method employed by the state in aiding them), either their financing methods impede achievement of the national goal of reducing the deficit in the public sector or, even if these investments are, theoretically, priority expenditures, they end up by being considered « non priority » because of the nature of their financing. Much better results would be obtained if capital investments of the local governments were aided by direct contributions of the central government. With this method, a substantial part of these investments would be financed through current revenues out of the state budget. The central government could always choose to increase its budgetary deficit or to increase its current tax revenues or to curtail some sector of public expenditures. In so doing, there would be no onus against the investments of local governments and no conflict of objectives between sound national fiscal policy and sound public expenditure policy in the field of education.

Annex II

TABLE I. EDUCATIONAL FUNDS BY SOURCE AND BY COUNTRY

Millions of dollars (1957).

SOURCES OF RECEIPTS	AUSTRIA		DENMARK		GERMANY		ITALY		NETHER-LANDS		NORWAY		SWEDEN		UNITED KINGDOM (England) & Wales)	
	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%
Central Government	94	67.6	73	66.7	16	1.0	609	82.4	280	67.5	30	20.8	247	59.4	1176	69.1
Local authorities	36	25.9			1361	91.1	130	17.6	130	31.3	110	76.4	169	40.6	495	29.1
State Governments	8	5.8	36	33.3	845	56.6	14	1.0	1	0.2			10	2.4		
Other local authorities	28	20.1			516	34.5	116	16.6	129	31.1			159	38.2		
Rent					7	0.5			3	0.7						
Loans					80	5.4										
University grants															4	0.2
Research subsidies															14	0.8
Student fees	9	6.5			30	2.0			2	0.5	4	2.8			13	0.8
Other payments by parents																
Grants																
Other sources, not specified																
Total receipts	139	100.0	109[1]	100.0			739	100.0	415	100.0	144	100.0	416	100.0	1702	100.0

[1] Total receipts are not known. Data is available only for the central and state governments.

TABLE II. EDUCATIONAL EXPENDITURES BY COUNTRY

Millions of dollars (1957).

TOTAL EXPENDITURES	AUSTRIA		BELGIUM		DENMARK		FRANCE		GERMANY		NETHER-LANDS		NORWAY		SWEDEN		UNITED KINGDOM (England) & Wales)	
	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%
Ordinary expenditures	123	88.5	208	92.0	109	100.0	837	76.9	1142	76.5	324	78.1	110	76.4	349	83.9	1546	89.4
Expenditures for central administration	1	0.7	3	1.3	1	1.0	13	1.2	19	1.3	4	1.0	2	1.4	9	0.5	69	4.0
Teaching expenditures	118	84.9	193	85.4			824	75.[illegible]			306	73.7	100	69.4	313	75.2		
Teachers' salaries	74	53.2	182	80.5	108	99.0	657	60.4	664	44.5	239	57.6	75	52.1	313	75.2	782	45.2
Other teaching expenditures	44	31.7	11	4.9			167	15.3	459	30.7	67	16.1	25	17.3			695	40.2
Other ordinary expenditures	4	2.8	12	5.3							14	3.4	8	5.6	34	8.2		
Capital expenditures	6	11.5	18	8.0	...	...	251	23.1	320	21.4	71	17.1	34	23.6	67	16.1	66	3.8
Dept servicing									32	2.1	20	4.8					118	6.8
Total expenditures	129	100.0	226	100.0	109	100.0	1088	100.0	1494	100.0	415	100.0	144	100.0	416	100.0	1730	100.0

TABLE III. ORDINARY EXPENDITURES BY LEVEL AND TYPE OF EDUCATION

Millions of dollars (1957).

ORDINARY EXPENDITURES	AUSTRIA		BELGIUM		DENMARK		FRANCE		GERMANY		NETHER-LANDS		NORWAY		SWEDEN		UNITED KINGDOM (England) & Wales)	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Central administration	1	1.6	3	1.3	1	1.0	12	1.5	19	1.	4	1.2	2	1.5	2	0.5	61	3.9
Instructional expenditure	117	95.2	193	92.8	108	99.0	771	92.1	1108	97.	306	94.6			313	89.6	1222	79.0
Pre-school education			79	37.9	100	91.5	36	4.3	563	49.3	16	4.7	100	90.9			6	0.4
Primary education	34	28.1					367	43.8			132	40.8	61	55.6	206	58.9	483	31.2
Secondary education	49	40.2	97	46.7			298	35.6	427	37.4	121	37.5	29	26.5	70	20.0		
General	27	22.0	48	23.3			165	19.7	264	23.1	63	19.4	13	11.5	44	12.5	430	27.8
Normal	1	0.9	7	3.3			18	2.2			6	1.9	2	1.8	6	5.8		
Technical	21	17.3	42	20.1			115	13.7	163	14.3	52	16.2	14	13.2	20	1.7	273	17.7
Higher education	12	10.3	15	7.2	8	7.5	59	7.1	118	10.3	31	9.7	7	6.3	23	6.6		
Special education	1	1.4					1	0.1			2	0.7	2	2.0	7	1.9	26	1.6
Adult education	1	0.9									4	1.2	1	0.5	7	2.2	4	0.3
Art education			2	1.0														
Other education	17	14.3					10	1.2										
Other ordinary expenditures	3	3.2	12	5.9			54	6.4	14	1.2	14	4.2	8	7.6	34	9.9	263	17.1
Scholarships													2	1.7				
Lunch & Milk programmes																	120	7.8
Post-School education		0.2																
Maintenance of schools and property	2	2.1																
Teachers' fund													1	0.6				
Examination costs											1	0.3						
School transport costs																	22	1.4
Pensions													5	5.3				
Scientific research			12	5.9			20	2.4										
Cultural activities, libraries							34	4.0										
Educational services																		
Medical care																	29	1.9
School subsidies											7	2.2					75	4.8
Other expenditures, not specified	1	0.9									6	1.8					19	1.2
Total ordinary expenditures	123	100.0	208	100.0	109	100.0	837	100.0	1142	100.0	324	100.0	110	100.0	349	100.0	1546	100.0

E

FORECASTS OF FINANCIAL IMPLICATIONS OF EDUCATIONAL EXPANSION

16

FINANCIAL IMPLICATIONS OF THE EXPANSION, BY 1970, OF PUBLIC AND EDUCATIONAL EXPENDITURES IN FIVE COUNTRIES OF THE EUROPEAN ECONOMIC COMMUNITY

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17

EDUCATIONAL EXPENDITURES IN THE COUNTRIES OF THE MEDITERRANEAN REGIONAL PROJECT

Secretariat,
Directorate for Scientific Affairs.

18

FINANCIAL IMPLICATIONS OF THE MEDITERRANEAN REGIONAL PROJECT

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Chapter 16

FINANCIAL IMPLICATIONS OF THE EXPANSION, BY 1970, OF PUBLIC AND EDUCATIONAL EXPENDITURES IN FIVE COUNTRIES OF THE EUROPEAN ECONOMIC COMMUNITY

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I. TASKS AND RESULTS OF THE PRESENT STUDY

1. TASKS

This study attempts a qualified reply to the question : What are the implications of increased public expenditures for education within the framework of a growing national income ? It considers the existing possibilities for the public finance of education in some of the more developed OECD Member countries, namely the German Federal Republic, Belgium, France, Italy and the Netherlands. On the basis of the norms of the immediate past and certain broad hypotheses, it attempts to analyse the possibilities for 1970. The study hopes to fulfil the well-known aim of economic projections, namely to be useful to those dealing with the « broad affairs of the nation »[1].

The possibility of success in this endeavour is subject to many serious limitations, only two of which are cited below :

Firstly, the inherent difficulties of forecasting. While the superficial observer of projections might erroneously assume that social economists claim to be blessed with second sight, we cannot really foresee the future. We shall refrain, however, from enumerating the basic principles of how projections must be read and interpreted since these have been dealt with so often before.

Secondly, the incomplete character of the available data. In particular, our task was severely handicapped by incomplete information on educational expenditure. Accordingly, we limited our-

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* The author wishes to express his appreciation to his assistant Ernst H. Stahr for assistance in preparing this paper.

[1] Gerhard Colm, « Economic Projections : Tools of Economic Analysis and Decision Making » ; *American Economic Review*, Vol. 48 (1958) No. 2, (Papers and Proceedings), pp. 178 - 187, (see p. 180).

selves in this report to a sketch of a few guiding lines using the case of the German Federal Republic as an illustrative example. Further research is needed to establish future educational expenditure requirements for each country. As an alternative, efforts were concentrated on finding and describing possible trends in public revenues and expenditures, thus setting the framework within which the educational programme would be placed. Whether this will be a place in the sun or in the shade of the public sector will depend on political decisions outside the scope of this study.

The study, like other attempts of the same kind, is based on the concept that an understanding of the components of current national income, together with the projections which have been derived from this understanding, may serve as « a guide for a consideration of national priorities in resource use »[1].

2. ARGUMENTS AND RESULTS

The arguments and results of this study may be summarized as follows :

A. *All countries*

i) Budget comparisons show considerable variation from country to country in the relative share of the public sector in national income for the period between 1957 and 1962. In the Netherlands, the Federal Republic of Germany and France this share was relatively high, whereas in Italy and in Belgium the relative shares were considerably smaller.

ii) When trends and averages are calculated, some patterns emerge for each country, although the results can be interpreted only under considerable limitations. Projections have been prepared using three arbitrary hypotheses.

iii) These hypotheses are :

> Hypothesis I (structural hypothesis) : The increases in revenue in a country depend on its relative proportion of taxes with a high yield elasticity (direct taxes as a proportion of total taxes).
>
> Hypotheses II (assimilation hypotheses) : The countries under review have a tendency to assume a similar relation of public expenditures to GNP, where the trend to the higher shares for public expenditures prevails.
>
> Hypothesis III (credit hypothesis) : Public expenditures will, in the long run, be financed at least in part with credit.

iv) These hypotheses will yield ratios of the proportion of public expenditures to the level of total expenditures. These estimates applied to two « expert » projections of total expenditures convey an idea of the means available to fulfil all public tasks for 1970.

v) The share of educational expenditure in 1957 and 1959 within the total is indicated by a comparison of the national budgets. If our projections based on arbitrary assumptions are correct, then both absolute and relative increases in educational expenditure would be possible in the future. The experts have estimated that national income will increase at rates of between 3.45 and 5.85 per cent per year. It is presumed that there will be a growing share of the public sector in this national product, although the rate of this increase will not be the same in each country. France is an exception where it is assumed that public expenditures will remain at the same proportion of the growing gross national product.

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[1] *Ibid.*

vi) These conclusions apply — and this is as important as it is self-evident — only on the assumption that the expansion of other items of expenditure will not absorb the additional resources.

B. *Germany*

vii) According to two estimates of requirements, German expenditure for education must increase considerably and by 1970 will reach more than twice its 1959 level. This will involve the application of different combinations of the following conditions : the reduction of other items of expenditure ; the allocation of a larger share of national income to the public sector. At the latter extreme, this would amount to 41 per cent of the total budget, as compared to the 39.2 per cent which has been the average during the last few years.

viii) Yield elasticity of income sources accruing to Länder and municipalities (the authorities principally concerned with education) appears relatively high. Thus the problems of financing education may, at first glance, be underestimated. An analysis of the revenues available for all administrations on the whole, however, tends to hide the differences in yield which exist at regional and local level.

II. DEVELOPMENT OF GROSS NATIONAL PRODUCT, 1970

1. WORKING HYPOTHESES

We will start with the forecasts of GNP in order to give the background for predicting the revenues and expenditures of the public sector. For this purpose, we refer to an EEC analysis[1] with the expectation that the results will be relatively comparable.

Two working hypotheses were expounded[2] concerning the future levels of employment and productivity and two growth rates for GNP were then determined. Both growth rates assume a constant annual increase over the period studied. The principal growth hypothesis (designated as B) when it is brought about by favourable general conditions[3] appears to be considered more likely by the authors. Hypothesis A refers to a slightly lower rate of economic growth.

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[1] Kommission der Europäischen Wirtschaftsgemeinschaft (Ed.). *Die Aussichten der Wirtschaftsentwicklung in der EWG von 1960 bis 1970,* 1962. English : Commission of the European Economic Community (Ed.). *Economic Development Prospects in the EEC from 1960 to 1970,* 1962. French : Commission de la CEE (Ed.). *Les perspectives de développement économique dans la CEE de 1960 à 1970,* 1962. - The numbers of the pages cited may incidentally differ slightly in the three editions.

[2] *Ibid.,* cf. pp. 6, 7, and 27 et seq. for details of the working hypotheses.

[3] *Ibid.,* p. 7.

Calculations were based on constant 1960 prices. Results in the currencies of the countries were converted into US dollars (at the 1960 exchange rate)[1]. While this procedure succeeds in increasing the comparability of the results, it introduces, of course, the problems inherent in official exchange rates.

2. ASSUMPTIONS[2]

A. For *Germany,* the growth in GNP was calculated on the basis of three assumptions :

- *a)* the number of employed increases, between 1960-1970, by 3.4 per cent, while the employment ratio of the total population decreases from 47.5 per cent to 45.5 per cent ;
- *b)* productivity per hour of work increases under hypothesis *B* by 62 per cent and under hypothesis *A* by 57 per cent ;
- *c)* working hours per week decrease from 44 to 40.4 hours during the period under review.

B. The projection of the GNP in *Belgium* was based on four independent working hypotheses, concerning :

- *a)* adjusted domestic income (gross domestic product reduced by the net value added by the public sector and housing benefits) ;
- *b)* services of civil servants imputed rents and consumption ;
- *c)* housing benefits ;
- *d)* net factor income from abroad.

C. The projection for *France* was based on the concept of gross domestic production. Developments in domestic production as well as in manpower reserves and investments were considered, and then a study was made of factors providing a correction from gross domestic product to GNP.

In general, projection for France were based on data and trends contained in the IVth Plan.

D. For *Italy,* the GNP projections were prepared on the basis of estimates of anticipated employment and productivity.

E. *Netherlands* : Employment in the *Netherlands* was estimated on the basis of a constant labour force participation rate. In addition, assumptions were made with respect to changes in labour productivity, investment and consumption in the public and private sector, and the current balance of payments.

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[1] *Aussichten,* p. 26. Expressed in US dollars, the following exchange rates were applied :

Germany	0.23975
Belgium	0.02004
France	0.20390
Italy	0.00161
the Netherlands	0.26511

[2] With close reference to *Aussichten,* pp. 34 et seq.

Table 1. AVERAGE YEARLY GROWTH RATES OF GNP IN THE FIVE COUNTRIES 1960-1970

COUNTRY		1960 - 1970		GNP*		
		HYP. A	HYP. B	1960	1970	
					HYP. A	HYP. B
Germany	z	3.9	4.2	67.705	99.209	102.325
	i	146.5	151.1			
Belgium	z	3.45	3.85	12.184	17.106	17.776
	i	140.4	145.9			
France	z	4.5	4.95	58.111	90.072	94.140
	i	155.0	162.0			
Italy	z	5.25	5.85	32.020	53.409	56.547
	i	166.8	176.6			
Netherlands	z	4.15	4.6	11.225	16.857	17.619
	i	150.2	157.0			

z — average yearly growth rate.
i — growth indices (1960 = 100).
* — in million US dollars at 1960 prices and exchange rates.
Source : Aussichten, pp. 72-76.

3. Results

The highest growth rate was assumed for Italy, the lowest for Belgium. Furthermore, it was noted that there is not a very significant difference between the growth rates of hypothesis B and hypothesis A. This difference is largest in Italy (0.6) and smallest in Germany (0.3). Furthermore, the largest increase in the GNP is expected for Italy (67 and 77 points), the lowest for Belgium (40 and 46 points).

III. DEVELOPMENT OF NATIONAL BUDGETS 1957-1962

1. Introduction

Now that we have an idea of the probable development of GNP, we are faced with the question of how much the share of the public sector will be. How will revenues and public expenditures develop by 1970 ?

Our analysis of the past is once again based on an analysis of the EEC on revenues and expenditures of the public administrations in the EEC countries[1]. This is the report of a working group charged with comparative investigations of the national budgets of Member countries, and appears to be the best material available. The revenues of all public administration were included in this report[2]. In the sense of national accounting, this term encompasses all public authorities whose revenues are not derived primarily from market sales. The determining factor is the economic function rather than administrative form. Difficulties are encountered, particularly for Germany, in defining some municipal functions which by appearance tend to be « enterprises », but are nevertheless classified as « administrations ». However, available data indicate that the size of the transactions in these institutions is relatively small[1].

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[1] Kommission der Europäischen Wirtschaftsgemeinschaft (Ed.), *Die Einnahmen und Ausgaben der öffentlichen Verwaltungen in den Ländern der EWG*, Vol. I : Die Wirtschaftskonten der öffentlichen Verwaltungen, Vol. II : Die funktionelle Gliederung der öffentlichen Ausgaben, Vol. III : Statistischer Anhang, all volumes hectographed, 1963. — French version available.

[2] Cf. for the following *Einnahmen und Ausgaben*, Vol. I, p. 4 et seq.

The sectors « State », « Territorial Administrative Bodies » and « Social Insurance » constitute the subdivisions of public administrations ; the sector « Other Administrations » is not listed. This omission is emphasized because some countries use this title to designate private, non-profit-making institutions, possibly including educational institutions.

The working group of the EEC had two aims in mind[2] :

— to show the burden carried by the administrations according to their volume and kind ;

— to show how the money and capital market had to supplement the « real revenues ».

We do not intend to argue with the authors about the ambivalent concept of a « burden ». In any case these aims have led to special interpretations of certain types of financial transactions[3]. In addition to the difficulties encountered in their analysis, there were difficulties stemming from the effort to keep as far as possible within the limits of procedures approved annually by parliament[4]. Let us sum up :

Revenues : Financial transactions, such as raising loans from the public, and from banking or other finance institutions, were not included.

Expenditure : In this case, financial transactions are considered. These are mainly public loans, advances, shares and redemptions[5].

Table 2 shows the absolute amounts of revenues and expenditure in the currency of each country.

2. METHOD OF COMPARISON

In order to compare public revenues and expenditures of different countries, these figures can be considered as proportions of the country's product. Table 3 indicates the ratios of revenues and expenditures to the GNP of the five countries.

In order to prepare the forecast it was necessary to study the trend in these values — if there is any. Therefore, for each country a linear trend was calculated. Revenues and expenditures are not considered in monetary terms but as a proportion of the national product. The results are summarized in table 4.

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[1] *Ibid.*, p. 4.

[2] Cf. *Einnahmen und Ausgaben*, Vol. I, p. 14.

[3] Cf. *Ibid.*, pp. 12 and 14.

[4] *Ibid.*, pp. 12 and 14.

[5] The report stresses this to be a point of departure from the economic accounts drawn up by the working group and those arrived at by OECD and UN in the framework of their applied systems of national accounting. *Einnahmen und Ausgaben*, Vol. I, p. 12.

TABLE 2. EXPENDITURE AND REVENUES OF ALL PUBLIC ADMINISTRATIONS

IN MILLIONS (EXCEPT FOR ITALY, IN BILLIONS) OF CURRENCY OF THE APPROPRIATE COUNTRY

YEAR	GERMANY (FR)	FRANCE	ITALY	NETHERLANDS	BELGIUM
		EXPENDITURES			
1957	85.952	83.994	5.611	14.610	156.982
1958	94.626	97.965	5.744	15.149	173.836
1959	102.422	105.757	7.187	16.118	191.115
1960		111.456	7.411	16.827	200.712
1961	126.262	123.348	7.795	18.769	208.429
1962	139.450	136.135	9.088	20.205	221.110
		REVENUES			
1957	83.487	72.117	5.293	12.769	136.560
1958	91.705	90.540		12.884	139.869
1959	100.184	95.192	6.505	13.824	148.909
1960		102.057	6.876	15.742	157.859
1961	127.039	113.760	7.055	16.877	174.004
1962	138.680	125.115	8.149	17.744	189.920

Source : Einnahmen und Ausgaben, Vol. I, pp. 15 and 17.

TABLE 3. SIZE OF REVENUES AND EXPENDITURE OF ALL PUBLIC ADMINISTRATIONS AS A PERCENTAGE OF THE GNP 1957-1962

YEAR	GERMANY (FR)	BELGIUM	FRANCE	ITALY	NETHERLANDS
		REVENUES			
1957	37.4	26.3	33.9	33.0	36.1
1958	38.5	26.8	37.0	.	35.9
1959	38.8	27.7	35.6	35.6	35.9
1960	.	27.6	34.5	34.7	36.8
1961	38.9	28.9	35.6	32.0	37.6
1962	39.6	29.6	35.4	33.1	37.3
Average values 1957-62	38.6	27.8	35.3	33.7	36.6
		EXPENDITURES			
1957	38.5	30.0	39.5	35.0	41.3
1958	39.7	33.3	40.0	33.6	42.2
1959	39.7	35.6	39.5	39.3	41.9
1960	.	35.0	37.6	37.1	39.4
1961	38.7	34.7	38.6	35.4	41.8
1962	39.3	34.5	38.5	36.9	42.5
Average values 1957-62	39.2	33.9	39.0	36.2	41.5

Source : Einnahmen und Ausgaben, Vol. I, pp. 15 and 17.

TABLE 4. REVENUES AND EXPENDITURE OF ALL PUBLIC ADMINISTRATIONS IN RATIO TO THE GNP 1957-1970

CALCULATIONS (1957-1962) AND PROJECTION (1970) OF A LINEAR TREND

YEAR	GERMANY (FR)	BELGIUM	FRANCE	ITALY	NETHERLANDS
			REVENUES		
1957*	37.8	26.2	35.3	34.1	35.7
1962*	39.5	29.4	35.5	33.3	37.5
1970*	42.2	34.6	36.0	32.0	40.2
Average values 1957-62	38.6	27.8	35.3	33.7	36.6
			EXPENDITURES		
1957*	39.1	32.0	39.7	35.3	41.4
1962*	39.2	35.7	38.2	37.1	41.7
1970*	39.3	41.7	35.6	40.0	42.2
Average values 1957-62	39.2	33.9	39.0	36.2	41.5
			DIFFERENCE BETWEEN REVENUES AND EXPENDITURE		
1957	—1.3	—5.8	—4.5	—1.2	—5.7
1970	+ 2.9	—7.1	+ 0.4	—8.0	—2.0
Average values 1957-62	—0.6	—6.1	—3.7	—2.5	—4.9

Source : (for the actual figures) : *Einnahmen und Ausgaben*, Vol. I, pp. 15 and 17.

This procedure is not without its limitations. It may, of course, be argued that the six observations are insufficient to deduce a trend. We agree. But what to do if no more *comparable* figures are available ? The alternative, longer series of less reliable data does not offer an advantage as we see it. On the other hand, this least squares technique does have the advantage that it reduces the danger of subjective miscalculations. Socio-economic variables of the kind under examination here usually change relatively slowly. An exception occurs, however, when discontinuities appear, such as happened in Italy.

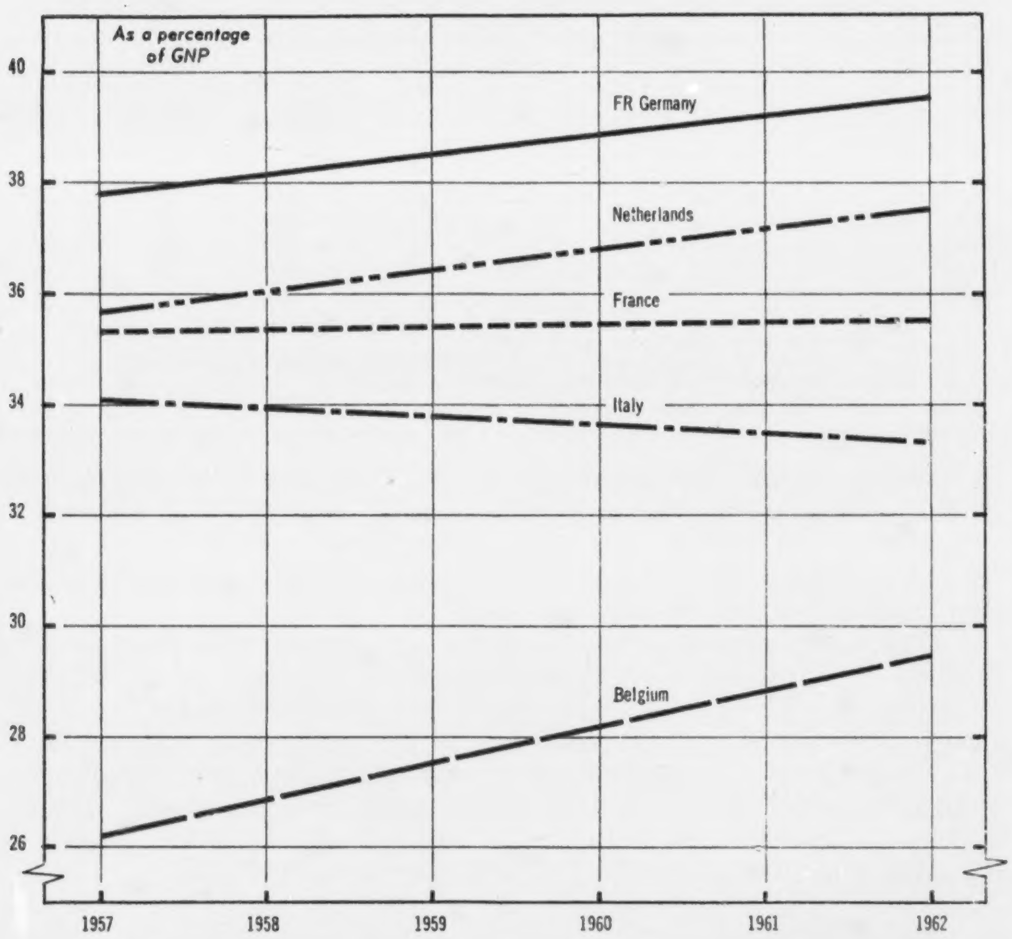
Being fully aware of the insufficiencies, we have nevertheless decided to work with these short series, knowing that we will not accept the calculated results without further consideration. They will serve only as the starting point for estimates which we are going to make founded on more general considerations as well as special information for the particular country.

3. REVENUES

A brief glance at the data on revenues reveals that the Belgium share of the public sector is particularly low, while the highest returns were obtained for the public administration of Germany.

Graph 1 shows these linear trends. The steadily growing trend is readily discernible for Germany even from a cursory glance at the table. Mathematical analysis reveals that the trend for the Netherlands exactly parallels that of Germany, although at a somewhat lower level. The similarity in these trends recalls the structural similarity in the tax systems of the two countries.

Graph 1. REVENUES



A definite trend in the development of the French and Italian revenues is questionable ; but in case such a trend should exist, we could state a slight rise of the French revenues, while the data for Italy exhibit a slight downward trend. Here again, the similarity in revenue trends recalls a certain similarity in the structural relationship of the two tax systems.

The case of Belgium distinguishes itself by a low starting point and a rapid growth. Thus there is an apparent assimilating tendency, i.e. towards equalization of the distribution of expenditures of the other countries.

As an aid in preparing a forecast of revenues, let us now formulate a hypothesis. The expansion in the proportion of revenues to GNP depends on the proportion of income and property tax (direct taxes) within the tax revenue as a whole. Income taxes have, as a rule, a high yield elasticity with respect to GNP. Our hypothesis is therefore as follows : the greater the share of taxes with high yield elasticity in the total tax revenue, the greater will be the increase in revenue quotation.

The reality of this hypothesis seems to be confirmed at first sight. In Table 6, countries are ranked according to rate of increase

Table 5. STRUCTURE OF TAX REVENUES
Types of taxes considered as a percentage of total tax revenue

	1961		
	DIRECT TAXES[1]	INDIRECT TAXES[2]	OTHERS[3]
Germany	41	55	4
Belgium	38	60	2
France	27	71	2
Italy	27	69	4
Netherlands	55	41	4

1. Income taxes from firms and households.
2. Taxes on turnover, manufacture or goods traffic and services, customs duties.
3. Taxes on property and proceeds from public enterprises.

Source : Einnahmen und Ausgaben, Vol. I, p. 80.

in revenue share and according to the proportion of direct taxes in the overall yield. Our expectations will be verified if Belgium is considered as a special case. This confirmation is, of course, helped by the parallel growth rates for Germany and the Netherlands, and the similarities for France and Italy.

Table 6 at least does not contradict our hypothesis. At this point, it must be admitted, that even an absolute parallel would not come as a surprise. The group of direct taxes evidently includes those with progressive rates, and because this is the case (and only so far as this is the case) we shall give our revenue structure hypothesis a chance to prove itself. On the other hand, the hypothesis is not a matter of course. An « automatic » quota increase in a growing economy can function when the rates are not corrected.

4. EXPENDITURE

Belgium with 30 per cent showed the lowest proportion of expenditures for the public sector for 1957. By 1962 this ratio increased to 34.5 per cent, but was still the lowest compared to the

Table 6. RATES OF INCREASE IN PUBLIC REVENUES AND RELATIVE SIGNIFICANCE OF DIRECT TAXES

TREND			TAXES		
RANK	COUNTRY	RATE OF INCREASE[1]	RANK	COUNTRY	PROPORTION OF DIRECT TAXES 1961, AS A PERCENTAGE OF TOTAL TAXES
1	Belgium	0.32	2	Netherlands	55
2	Netherlands	0.17	3	Germany	41
3	Germany	0.17	1	Belgium	38
4	France	0.03	4	France	27
5	Italy	— 0.08	5	Italy	27

1. Slope b in equation $y = a + bt$.

TABLE 7. RATES OF INCREASE IN PUBLIC EXPENDITURE

RANK	COUNTRY	INCREASE[1]
1	Germany	0.37
2	Belgium	0.18
3	Italy	0.03
4	Netherlands	0.01
5	France	— 0.16

[1] Slope b in equation $y = a + bt$.

other countries. Highest ratios for similar periods were recorded for the Netherlands.

What do these trends indicate ? (See Graph 2 and Table 7) The trend line for France has a downward slope. The starting point is relatively high.

The expenditure ratios remained practically constant for Germany and the Netherlands. Once again, the curves for these two countries appear almost parallel.

Italy manifests a remarkable, although not too steep, upward trend. Our results are based on an original set of figures where the values for 1959 are supposedly too high because of extraordinary transactions of mere accounting relevance[1]. If average values from the ratios of other years are substituted, however, the result is not decisively altered.

Belgium, with its increase of 0.37 points per year, occupies a special position in the study of expenditure. Obviously this country's level of expenditure is quickly approaching that of its neighbours.

The share of public expenditure in GNP increases slightly in the Netherlands, remains constant in Germany and decreases in France, i.e., in countries whose share is already relatively high. Marked increases occur in the countries with relatively lower shares. Although the results may be questionable, in view of the scanty material on which they are based, they certainly do not contradict the idea that such development might exist.

A tendency towards similar shares of public expenditure in GNP seems to prevail in the countries under review. We adopt this as our second hypothesis in making projections.

This assumption is credible in view of the fact that the countries under review pursue policies toward an economic community, which implies, among other things, their intention to narrow the welfare gap between individual areas and raise the standard of less favoured areas[2]. In the course of this development, similar ideas will be conceived in the six countries with respect to the tasks of the public authorities and thus the proportion of the GNP that should be controlled by them. It is perhaps worthwhile to ask if this development is not the international form of levelling policy tendencies already familiar on the national level. Furthermore, for different reasons it seems plausible to us to expect increasing rather than decreasing or unchanged levels of public expenditures. Thus we are inclined to assume that the development will be towards higher shares ; a tendency well known as the Adolph Wagner « law » of increasing expansion of public activities.

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[1] Cf. *Einnahmen und Ausgaben*, p. 15.

[2] Preamble to the Rome treaty.

To check up on our hypothesis, we have calculated standard deviations and coefficients of variation (See Table 8).

There is a considerable reduction in the variation of the observed values of the various countries during the period 1957-1962, as indicated by the values of δ and V. For 1957, the standard deviation amounts to 4.0. Five years later we find a δ of 2.6.

If we express these standard deviations as a proportion of the average value (coefficient of variation), we obtain the following coefficients : for 1957 the variation amounts to 10.8 per cent, while by 1962 this value has shrunk to 6.9 per cent, a considerable decrease in the variation of the observations[1].

IV. DEVELOPMENT OF PUBLIC BUDGETS UP TO 1970

1. General Considerations

We will now attempt to project the development of public revenues and expenditures up to 1970, first determining the share of the public revenues and expenditures in GNP and then deducing their absolute values.

It should be kept in mind that by this procedure the same assumptions made for estimating the future GNP have been retained in establishing the projection of public budgets. That is to say, economic disasters are excluded and the principal growth hypothesis assumes favourable conditions. The projection bridges eight years. This is too short a period to expect a drastic change in attitudes

Table 8. STANDARD DEVIATIONS (δ) AND COEFFICIENT OF VARIATION (V)

	δ	V AS A PERCENTAGE
Revenues		
Actual 1957	3.9	11.6
Actual 1962	3.4	9.9
Averages 1957/62	3.7	10.7
1970, on basis of linear trend	3.7	10.0
Projection 1970	2.0	5.4
Expenditures		
Actual 1957	4.0	10.8
Actual 1962	2.6	6.9
Averages 1957/62	2.6	6.9
1970, on basis of linear trend	2.3	5.9
Projection 1970	1.[illegible]	3.6

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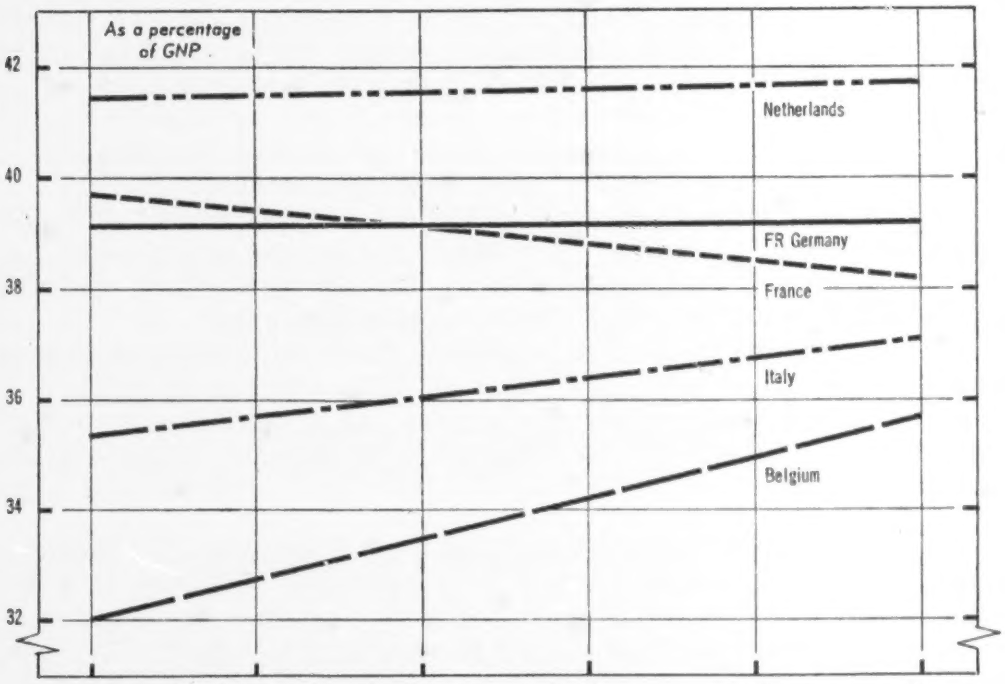
[1] With regard to revenues, this tendency is not as significant ; a fact reflecting different methods in financing the public activities.

Graph 2. EXPENDITURE



towards public activities and too long to predict political events important enough to create a radical alteration of the private share. So we think it reasonable to suppose that no extreme situations will occur.

Let us try the projection in the following way : As an initial step we consider the averages. Then, in spite of strong scruples of a methodological nature, we extend the calculated trends. However, these two steps only serve to prepare the judgment projection in which we are really interested. It remains to be seen whether the shortcomings caused by incomplete statistics will, in the final analysis, offset each other or whether they will accumulate. Of course, the projections cannot claim to be more than conclusions from our basic assumptions. Whether these assumptions are realistic will have to be judged by those using the projections. It might be considered that such a restricted projection is preferable to nothing, but sceptics may even doubt this.

2. PROJECTION[1]

At first we assume that the share of public administration will, until 1970, equal the average share for the period 1957-1962. The findings, applied to the estimated national product of 1970, may be seen in Table 10 for the growth hypothesis (A), and in Table 11 for the growth hypothesis (B). For purposes of easier comparison, we have kept the calculations in dollar currency. We notice that public authorities in Belgium and the Netherlands would be obliged to have a considerably large deficit. Approximately six and five per cent of GNP, on the average, had to be covered by credits. In Germany, revenues and expenditure are fairly balanced.

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[1] The first part of each graph depicts the actual development (1957-1962). The second part indicates the judgement projection. The lines start from the point suggested by the least squares estimate based on the 1957-62 period. They end where the freer judgment estimate takes them. (Graphs prepared by Wolfgang Germann.)

At the same time speculations based on averages are of a predominantly static character. Directions of developments are discernible to the extent that they influence the average values. But the trends fail to show in which direction they are going.

Projection by trend clearly differs from the above method in that changes can be more easily seen, as Tables 10 and 11 indicate.

The trend results for expenditure comply with our second (assimilation) hypothesis (See Table 8). The value of δ once again decreases slightly (from 2.6 to 2.3), and the variation coefficient decreases by one point.

Again, the relation between expenditure and revenues must be noted. In Germany (Graph. 3), the steady trend suggests that, by 1970, a surplus of approximately 3 per cent of the GNP will occur. France, too, could count on a small surplus in 1970. The Netherlands would find it possible to reduce their credit financing by a substantial proportion.

In Italy and Belgium, on the other hand, the current revenue and expenditure trends assume opposite directions. For Belgium, the gap in 1970, compared with that revealed by the calculation by averages, is not quite as pronounced as that for Italy where the difference will increase threefold by 1970.

Before undue attention is paid to the significance of these indications, the limited period upon which they are based should be recalled. The danger of accidental distortions is a very real one. In general, the strength of this procedure, which lies in bringing the trends into focus, turns out to be a weakness as soon as these trend lines are projected into the future. Correcting forces, which in reality will undoubtedly appear when curves take certain paths, are not considered in this technique. This cannot be overstressed ; additional considerations are, therefore, necessary.

They find their expression in the judgment projection[1]. This method is the least susceptible to the criticism of being too mechanical. It provides for the exercise of « Fingerspitzengefühl ». At the same time the economist, more than in any other case, runs the risk of getting his fingers burnt. It is nearly impossible to imagine an incontestable assumption.

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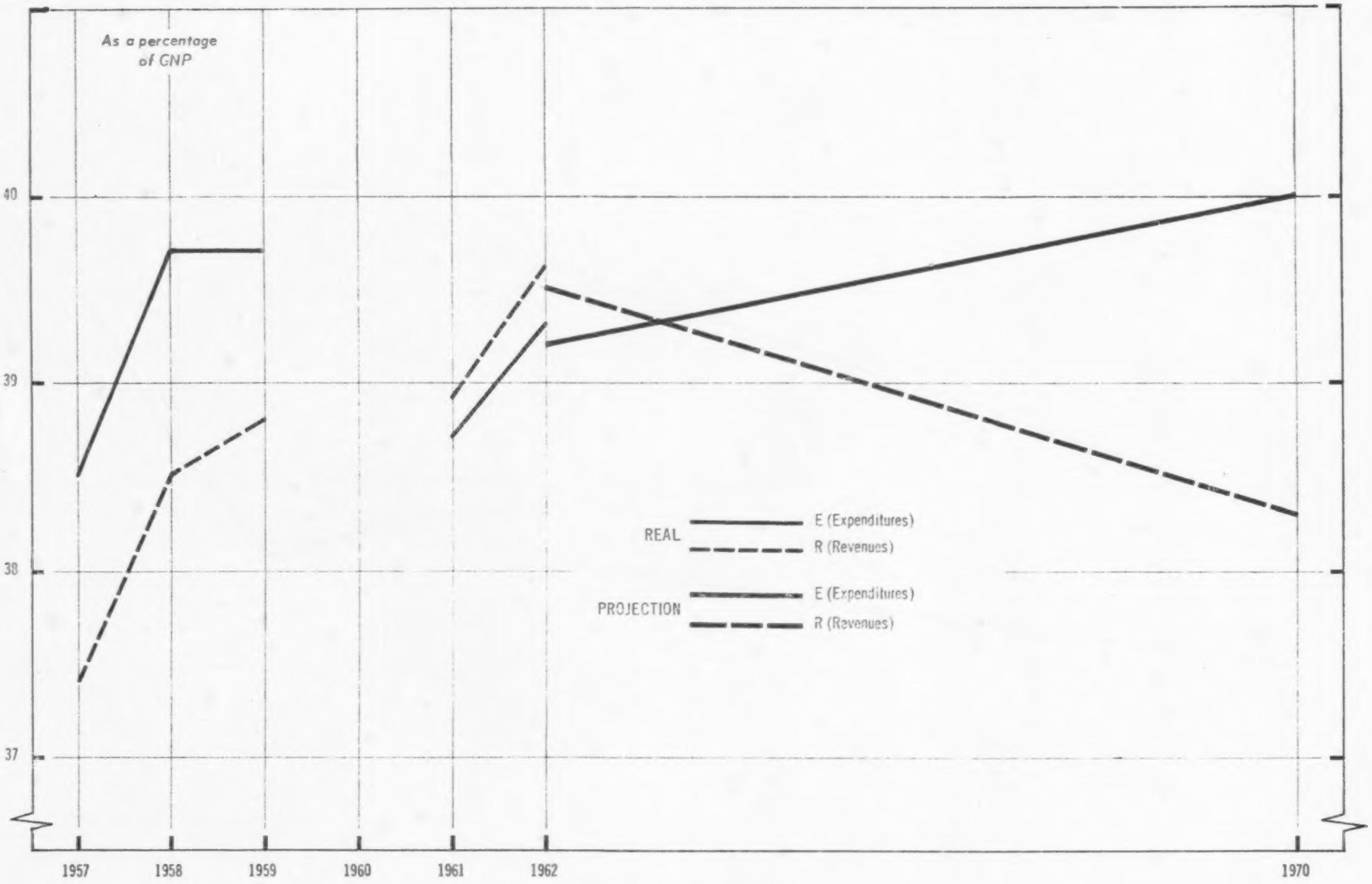
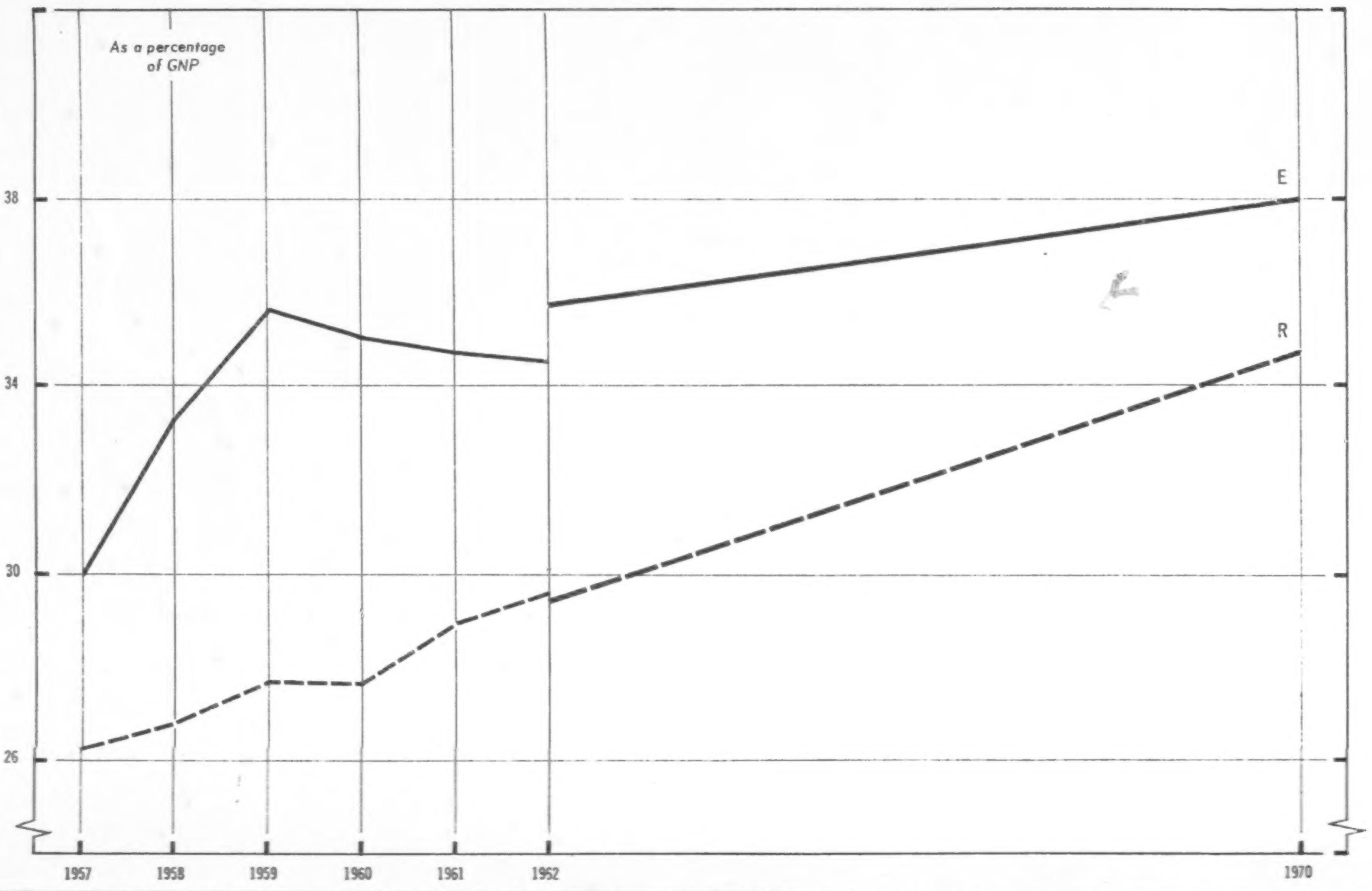
[1] The term « projection by judgment » is borrowed from Gerhard Colm and Manuel Helzner. The authors interpreted their « judgment model » to be based on « what we regard as the most plausible assumption, or more precisely as the assumptions most suitable for the use for which the projections are designed ». Gerhard Colm and Manuel Helzner, Financial Needs and Resources Over the Next Decade : At All Levels of Government, *Public Finances : Needs, Sources, and Utilization* ; National Bureau of Economic Research, Princeton, 1961, p. 3.

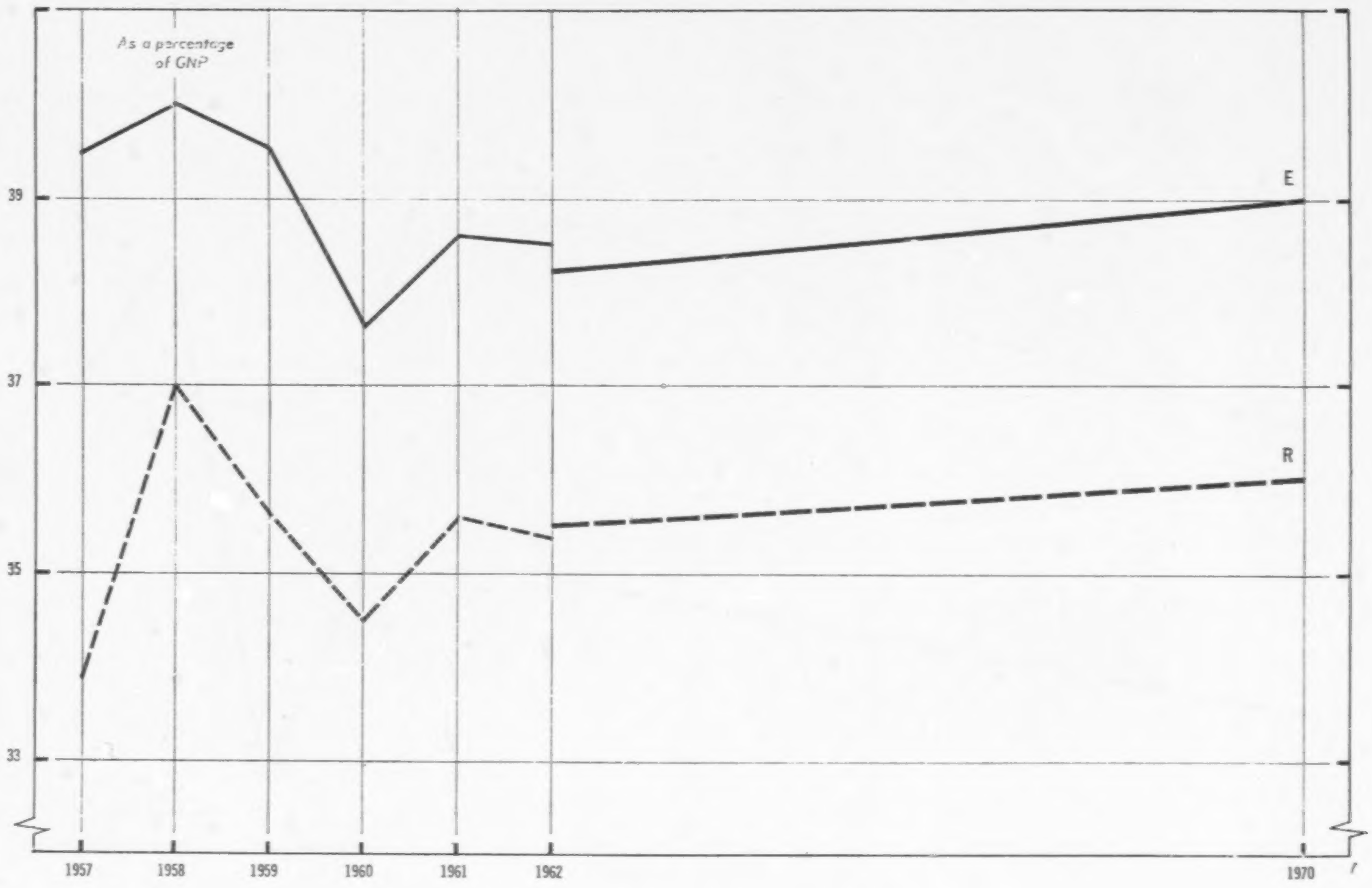
Graph 3. GERMANY



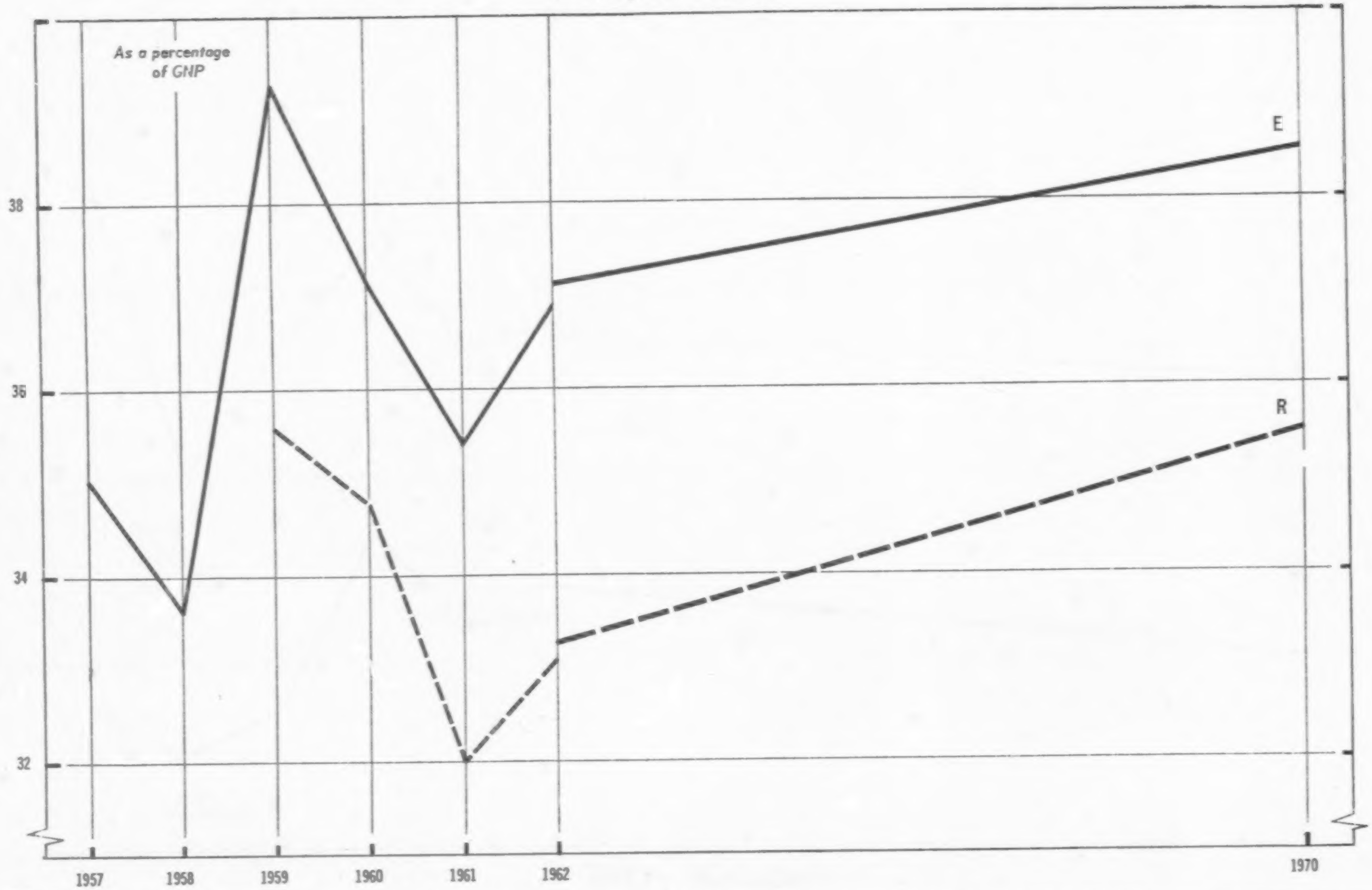
Graph 4. BELGIUM



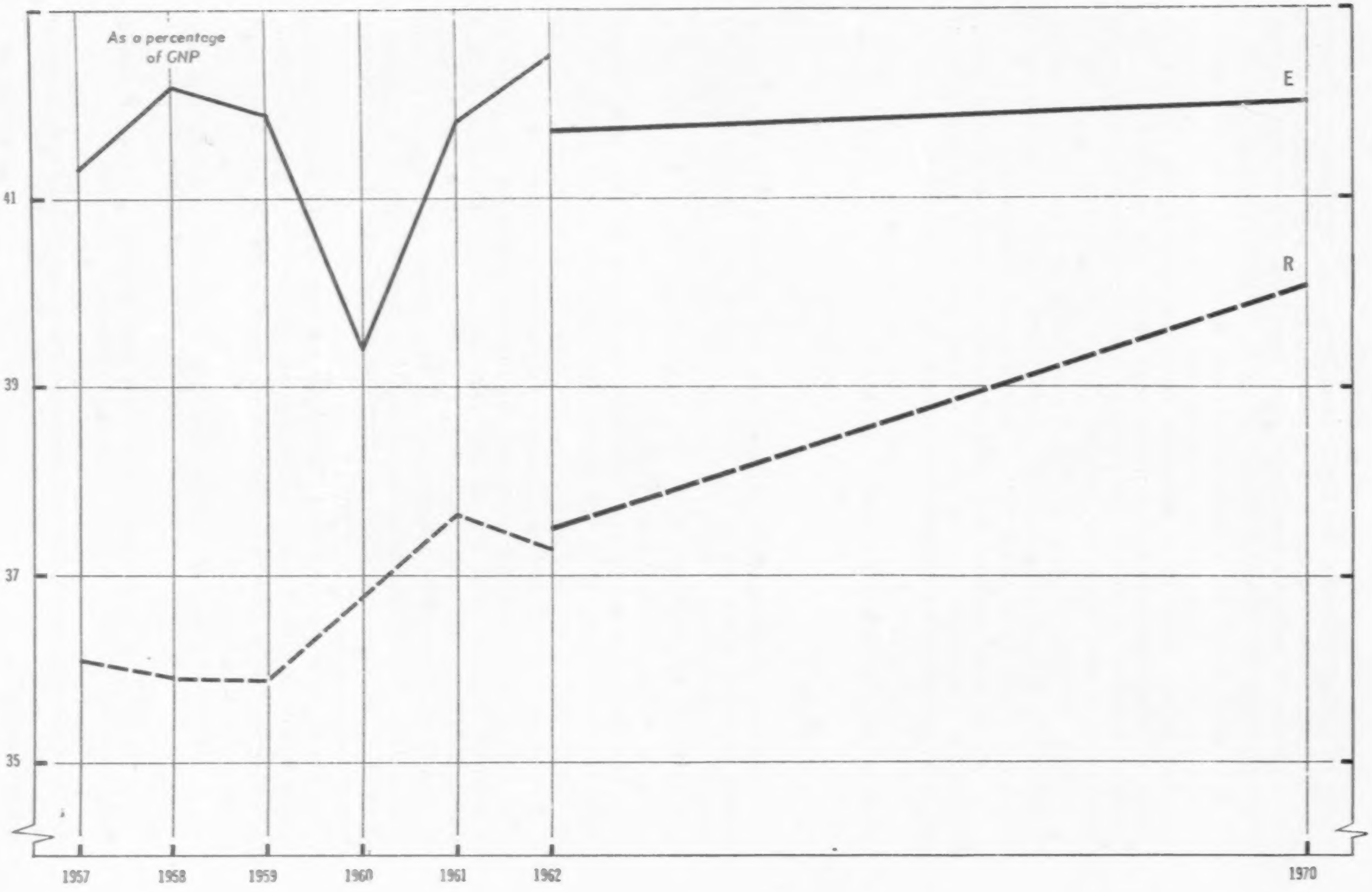
Graph 5. **FRANCE**



Graph 6. ITALY



Graph 7. THE NETHERLANDS



At any rate, with regard to possible directions in the development of public budgets, we think that legal and political obligations set the limits below which it is impossible to go. Furthermore, many major items of public expenditure (e.g. personnel and communication expenditures) are affected by the growth of the national product.

Another point to remember is that politicians want to demonstrate activity. This desire is more easily fulfilled by a spending-minded policy than by abstinence from expanding the budget. In spite of many parliamentary procedural rules, the rather loose connection between decisions on revenue and expenditures encourages politicians to be more concerned about expenditures than about revenues. Finally, thanks to the credit facilities available to public authorities, the consequences of expenditure decisions, which would otherwise have to be made up by taxation, are postponed.

Let us now assume that governments make use of this possibility, i.e. that they are, in the long run, going to finance part of their expenditure by resorting to credit (hypothesis III).

What implications, using judgment projections, can be drawn concerning the countries under review ?

a) *Germany*

Looking at Germany's expenditure, we consider that the rather slight increase apparent in the linear trend is also acceptable in the judgment projection. Such a trend can be reconciled with the assimilation hypothesis[1], since the expenditure share for Germany is, in any case, above the average.

The development of revenues such as shown by the linear trend calls for correction. It is not likely that the curve will continue to be above that of expenditure[2]. On the other hand, relative abundance of revenues will, no doubt, influence expenditure policy.

Taking this fact into account, the expenditure curve is drawn at a slightly higher level (at 40 per cent of GNP). This has been a fairly arbitrary decision. However, in politics or social psychology, identical mathematical procedures do not necessarily produce identical values. The 40 per cent share might become a significant threshold value[3]. Since speculation is unavoidable, we have, at least, chosen one which is a round number.

We further assume that the Governments would rather reduce taxes than abolish credit financing altogether. During 1957-1963, public authorities availed themselves of a sum equal to 1.5 - 2 per cent of the GNP in credit loans[1]. In future, an average proportion of 1.7 per cent seems not unlikely.

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[1] Shares of public expenditure tend to be of the same order of magnitude in all the EEC countries, where the trend to the higher shares prevails. Cf. p. 3, 16.

[2] In fact, in 1965 income taxes have been slightly reduced. It should, however, be added that there will be general elections in this year.

[3] The Federal Government, whose budget embraces approximately half of the public expenditure, has also expressed the desire to keep the growth of its budget in line with the real rate of growth of the GNP. This was not achieved in 1964.

In view of potential surpluses from regular revenues, this value might appear fairly high. But we must consider (apart from special budgets) the tripartition into three levels of government in Germany. The horizontal and vertical intergovernmental fiscal relations leave much to be desired, so that with comparable tasks there might quite likely be affluence (with correspondingly high expenditures) and poverty (followed by credit requirements) side by side.

To summarize : our judgement projection indicates an increase to 40 per cent for the expenditure share up to 1970, while the share for regular revenues approaches 38.3 per cent. Expenditures, obviously, have not yet reached their highest point. This is supported by the discussion on the « unsolved tasks » — mainly in the sphere of communications, transportation, health and, last but not least, education.

A reduction of the defence burden, now amounting to roughly one third of the Federal budget, would constitute a turning point which we have not attempted to estimate. Such an event would, obviously, necessitate a reappraisal of our projections[2].

b) *Belgium*

As far as Belgium is concerned, it may be assumed that the trend of assimilation of the expenditure share to that of the other EEC partners will continue. An increase from 33.8 (1958) to 41.7 (trend 1970) per cent of GNP nevertheless appears a rather large jump. Furthermore, a look at Graph 4 raises the question of which information can be gained from a least squares trend line. We therefore predict not quite so steep a rise ; our estimate will be nearer to 38 per cent.

Such expenditures, when considered from the revenue viewpoint, do not seem improbable. The share of direct taxes is considerable (structural hypothesis). In fact, the curve reveals a remarkable upward trend for the past. Even a less pronounced development in the same direction would permit expenditures to increase to 38 per cent and decrease the gap between expenditure and non-recurring revenues. This has been attempted during the last few years, although with little success[1].

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[1] Cf. Bundesministerium für Finanzen (Ed.), *Finanzbericht 1964*, Bad Godesberg o.J., pp. 460 and 31 (for 1962 and 1963). The statements in this report about incurring debts, and special credits of the German Federal Bank to international organisations, have been related to GNP values of the same book (p. 27).

[2] Author's note : Having dealt with the Federal Republic of Germany, the author steps outside the area best known to him. His information about facts and tendencies of economic development and the aims of financial policy is less well-founded, and his judgment becomes less sure. The following paragraphs *(b)* to *(e)* should not, therefore, be misconstrued as the work of a socio-economist claiming to be a special expert on the countries under review. Rather, this exposition should serve as a basis for dicussion and a challenge for others to correct the curve-picture according to their more intimate knowledge of a particular country.

Credit financing from 1957 to 1962 amounted to an average of 6.1 per cent (Table 4). Let us assume that a first effort would concentrate on halving this amount. According to our expenditure assumption, this would make it neccessary to collect a revenue of some 35 per cent of the GNP. The linear trend yields a figure of 34.6 per cent. In view of the fact that the slope of the revenue curve is fairly steep and that the ratio of public debt in the past has been higher, a state of affairs to which Belgium became accustomed, we opt for the lower revenue share. The judgment projection, therefore, anticipates a higher share of expenditures (38 per cent) and revenues (34.6 per cent) than have been observed in the past.

c) *France*

The expenditure curve (graph 5) shows a downward slope. Certainly, it must be conceded that the public budget of France was relieved of a burden with the end of the war in Algeria. On the other hand, new and rather ambitious goals for the budget, implying considerable sacrifices by the private sector, are contemplated. It may be asked whether the new tasks will not equal or even exceed the relief. A decrease of the share, such as was obtained with the trend projection, seems to us most unlikely, but the more realistic curve is difficult to discover. For lack of more detailed knowledge, we go back to the average value for 1957-1962, that of 39 per cent. The resulting correction seems also to be more consistent with the assimilation hypothesis.

On the revenue side, we accept the trend calculated from the curve, since this seems in harmony with our structural hypothesis.

For information purposes, we quote some yield elasticities[2]. Of tax yield (total des recettes fiscale) of the year 1963 :

a) the « contributions directes, perçues par rôles » yielded 16 per cent ;

b) the « contributions directes, perçues sans rôles » yielded 19 per cent ;

c) the « taxes sur le chiffre d'affaires » yielded 36 per cent.

While a growth of gross domestic product (production intérieure brute) of 4.2 per cent is forecast for 1964, expected yield increase from *(a)* above is 13.7 per cent, and from *(b)* 4.1 per cent. This gives us a coefficient of 3.3 and 0.98. With *(c)* the yield is expected to be 8.1 per cent higher in 1964 than in 1963, the relative coefficient being 1.9.

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[1] Cf. *Finanzbericht 1964*, op. cit., p. 68. — Albert Kervyn Lettenhove, La programmation belge ; *Reflets et perspectives de la vie économique*, Vol. II (1963) No. 2, p. 73 : « Il est apparu que l'impasse totale ne pourrait augmenter que dans des proportions modérées et, par conséquent, que la réalisation du programme ambitieux d'investissement public, arrêté par le Gouvernement, demandait que les recettes publiques augmentent un peu plus vite que les dépenses du budget ordinaire ».

[2] With reference to the GNP and tax yield, see Paul Coulbois, La loi de Finances 1964, *Revue de Science Financière*, Vol. 56 (1964), No. 1, pp. 161 and 168.

The combination of the two subjective curves, as opposed to the linear trend projection[1], reveals a gap ; this seems to approach reality. Credit requirements in such an instance would fluctuate between 3 and 4 per cent. For comparison : the average of the expenditure share on the one hand and the share of recurring revenues on the other differed between 1957-1962 by 3.7 per cent. Thus, our judgment projection yields an expenditure curve which remains on the 39 per cent level, while the revenue curve for 1970 increases toward the 36 per cent mark.

d) *Italy*

No data were available for revenues for 1958. The trend has been arbitrarily (and not too confidently) determined by assuming that the revenue share for 1958 was equal to the average of the other years. More information seems to be gained from the fact that the total expenditure and revenue curves (prior to 1962) were nearly parallel. The revenues fall below the expenditure by about 3 per cent. For our judgment projection, we assume that this difference will be maintained in future (graph 6).

The upward trend in expenditure is consistent with our conception. Italy previously showed a relatively small expenditure share. One would hesitate, however, to assume an increase to as much as the 40 per cent share suggested by the linear trend. In Italy, the « developing » country of the EEC[2], exceptionally large tasks have to be undertaken with public funds. But even a slower increase of the public share in the GNP would impose a heavy burden on the revenue system, all the more as this predominantly relies on indirect taxes. Thus, with reservations, an estimate of 38.5 per cent for expenditure and 35.5 per cent for revenues may seem justified.

e) *The Netherlands*

For the Netherlands, the linear trend appears reasonable. Just one remark : in the Netherlands the public sector of the GNP is bigger than in any other of the five countries, which indicates that there may be only a gradual increase in these values. This reflection prompts a slight correction : expenditures are assumed to run towards 42 per cent and revenues towards 40 per cent (graph 7).

5. COMPARATIVE SURVEY

Tables 9, 10 and 11 show a comparative survey of the results of our projections. Revenues and expenditures are expressed as a percentage of the GNP in 1970.

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[1] It is evident that our credit hypothesis, in which credit financing at long-term for public expenditure is assumed, does not exclude the possibility that national budgets may show a temporary surplus.

[2] The European Investment Bank's annual report for 1963 mentions, p. 63, that Italy's share of loans granted between 1958-1963 (total amounting to $ 358 million) represented 66 per cent.

Another look at Table 8 will reveal that in accordance with our « assimilation » hypothesis for expenditure in the judgment projection, the value of δ has been reduced to 1.4 and the coefficient of variation to 3.6 per cent. This reduction in variation also affects, thanks to our assumptions, the estimates of revenues.

6. PRICE CONSIDERATIONS

Revenues, expenditure and credit needs have been given in U.S. dollars at constant, 1960 prices. Considerable difficulties would be involved in translating these figures into current terms, yet not doing so may mask the revenue and expenditure problems. It would not suffice, of course, to inflate the « real » figures by the anticipated increase in the « general price level ». It cannot be taken for granted that the prices for goods and services bought by the public administrations will parallel the general price development[1]. An upward shift of the general price level would increase revenues and thus, at first, appear to favour the public treasury. It is quite probable, however, that prices would increase more rapidly in markets where the public authorities act as a buyer. It would be important to consider the effect of price changes on education and training services, where the public administration might be compelled to cope, almost overnight, with increased demands. But these are problems requiring a special study.

TABLE 9. PUBLIC REVENUES AND EXPENDITURES 1970
IN RATIO TO THE GNP

Comparative survey of projection results

	GERMANY (F.R.)		BELGIUM		FRANCE		ITALY		NETHERLANDS	
	REV.	EXP.	REV.	EXP.	REV.	EXP.	REV.	EXP.	REV.	EXP.
Average	38.6	39.2	27.8	33.9	35.3	39.0	33.7	36.2	36.6	41.5
Trend value	42.2	39.3	34.6	41.7	36.0	35.6	32.0	40.0	40.2	42.2
Projection by judgment	38.3	40.0	34.6	38.0	36.0	39.0	35.5	38.5	40.0	42.0

V. EDUCATIONAL EXPENDITURES IN 1957 AND 1959

Having attempted to describe the order of magnitude of future public revenues and expenditures, we now have to determine how big a slice there will be for educational and training purposes. Once again, we refer to the EEC study for expenditure data for 1957 and 1959, as summarized in Table 12. These figures include : all administrative spendings on educational matters, as well as the financial requirements the administration has to meet in fields which, more generally, belong to the educational and cultural sector, e.g. the fine

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[1] Cf. Dick Netzer, Financial Needs and Resources over the Next Decade : State and Local Governments, *Public Finances : Needs, Sources, and Utilization*, National Bureau of Economic Research, Princeton 1961, pp. 61 et seq.

TABLE 10. GROWTH HYPOTHESIS A

BASED ON	AVERAGE 1957-62 PERCENTAGE OF GNP	AVERAGE MILLIONS OF U.S. DOLLARS	TREND VALUE 1970 PERCENTAGE OF GNP	TREND VALUE MILLIONS OF U.S. DOLLARS	PROJECTION 1970 PERCENTAGE OF GNP	PROJECTION MILLIONS OF U.S. DOLLARS
Germany :						
GNP[1] 1970 . . . . 99.209						
Expenditures	39.2	38.890	39.3	38.989	40.0	39.684
Revenues	38.6	38.295	42.2	41.866	38.3	37.997
	— 0.6	595	+ 2.9	2.877	— 1.7	1.687
Belgium :						
GNP 1970 . . . . 17.106						
Expenditures	33.9	5.799	41.7	7.133	38.0	6.500
Revenues	27.8	4.755	34.6	5.919	34.6	5.919
	— 6.1	1.044	— 7.1	1.214	— 3.4	581
France :						
GNP 1970 . . . . 90.072						
Expenditures	39.0	35.128	35.6	32.066	39.0	35.128
Revenues	35.3	31.795	36.0	32.426	36.0	32.426
	— 3.7	3.333	+ 0.4	360	— 3.0	2.702
Italy :						
GNP 1970 . . . . 53.409						
Expenditures	36.2	19.334	40.0	21.364	38.5	20.562
Revenues	33.7	17.999	32.0	17.091	35.5	18.960
	— 2.5	1.335	— 8.0	4.273	— 3.0	1.602
Netherlands :						
GNP 1970 . . . . 16.857						
Expenditures	41.5	6.996	42.2	7.114	42.0	7.080
Revenues	36.6	6.170	40.2	6.777	40.0	6.743
	— 4.9	820	— 2.0	337	— 2.0	337

1. GNP in 1960 prices.

arts, scientific research and physical training[1]. Other expenditures included under this item, even though only loosely connected with education and training (radio, television, press, places of worship) are not very significant proportions[2].

The EEC working group on the co-operative studies of national budgets summarizes its findings as follows : Apart from the differences in spending for ecclesiastical affairs, the pattern of expenditures for cultural purposes in the various countries is not too different. These expenditures fall under three major headings : scientific research, physical education and fine arts. That means that all countries were aware of the necessity to give extensive support to the various branches of science and culture[3].

For France, the Netherlands and Belgium, expenditures on education have grown faster than total public expenditures and faster than GNP. Italy has maintained a relatively constant proportion of education expenditures in its budget while, measured as percentage of GNP, this category of public activity has increased. For Germany, educational expenditures have been kept practically constant.

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[1] *Einnahmen und Ausgaben,* Vol. II, p. 116.

[2] Cf. *Ibid.,* p. 130.

[3] *Ibid.,* p. 130.

We are recording the results of the comparative statistics in national budgets without drawing any conclusions, since the material is too scanty. But it cannot be overlooked that three larger countries, Germany, France and Italy, form a fairly homogeneous pattern which differs considerably from those found for the Netherlands and for Belgium. We shall refrain from making any projections here.

VI. EDUCATIONAL EXPENDITURE IN THE FEDERAL REPUBLIC OF GERMANY UP TO 1970

We are, however, in a position to supplement our study for Germany, by comparing future educational expenditure requirements with the assumed development of total public expenditure.

1. METHOD

We have consulted two references : Edding-Albers[1] and the Conference of Ministers of Education[2, 3] to obtain an idea of the amounts needed in 1970. We intend to refer these two publications to the report of the EEC working group, as seen in Table 12. Since Edding/Albers and the Ministers define their research objectives in a more limited sense, it became necessary to supplement their results.

The starting point is the concept of school expenditure[4]. This comprises the expenditure of all public administrations for elementary schools, « Mittelschulen »[5] and secondary schools, vocational and special training schools. Statistics for these are only slightly divergent in the three studies. Between 1957 and 1959, these expenditures amounted to two-thirds of the total expenditures of educational administrations[6].

In order to synchronize these studies, we inflated the requirement figures of Edding and Albers and of the Permanent Conference from 66 to 100 per cent. In other words, we assumed that those expenditures not connected with schools would grow at the same rate as those which were, or that the proportion of the designated expenditures to total educational expenditure would remain constant.

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[1] Friedrich Edding and Willi Albers : *Die Schulausgaben 1960/1970*, edited by Arbeitsgemeinschaft Deutscher Lehrerverbände, 2nd ed., Frankfurt a.M., 1960.

[2] Ständige Konferenz der Kultusminister der Länder in der Bundersrepublik Deutschland, *Bedarfsfeststellung 1961 bis 1970*, Stuttgart o.J.

[3] Educational matters are, according to the constitution of the Federal Republic of Germany, entrusted to the Länder. The Permanent Conference of the Ministers of Education of the Länder is trying to serve as a co-ordinating body.

[4] We had, however, to make some recalculations which are not reproduced here. The result must be considered approximate, although fairly accurate for our purposes.

[5] Lower grade secondary schools.

[6] Cf., p. 37.

TABLE 11. GROWTH HYPOTHESIS B

BASED ON		AVERAGE		TREND VALUE		PROJECTION	
		1957-62 PERCENTAGE OF GNP	MILLIONS OF U.S. DOLLARS	1970 PERCENTAGE OF GNP	MILLIONS OF U.S. DOLLARS	1970 PERCENTAGE OF GNP	MILLIONS OF U.S. DOLLARS
Germany :							
GNP[1] 1970	102.325						
Expenditures		39.2	40.111	39.3	40.214	40.0	40.930
Revenues		38.6	39.497	42.2	43.181	38.3	39.190
		— 0.6	614	+2.9	2.967	— 1.7	1.740
Belgium :							
GNP 1970	17.776						
Expenditures		33.9	6.026	41.7	7.413	38.0	6.755
Revenues		27.8	4.942	34.6	6.150	34.6	6.150
		— 6.1	1.084	— 7.1	1.263	— 3.4	605
France :							
GNP 1970	94.140						
Expenditures		39.0	36.715	35.6	33.514	39.0	36.715
Revenues		35.3	33.231	36.0	33.890	36.0	33.890
		— 3.7	3.484	+ 0.4	376	— 3.0	2.825
Italy :							
GNP 1970	56.547						
Expenditures		36.2	20.470	40.0	22.619	38.5	21.771
Revenues		33.7	19.056	32.0	18.095	35.5	20.074
		— 2.5	1.414	— 8.0	4.524	— 3.0	1.697
Netherlands :							
GNP 1970	17.619						
Expenditures		41.5	7.312	42.2	7.435	42.0	7.400
Revenues		36.6	6.449	40.2	7.083	40.0	7.048
		— 4.9	863	— 2.0	352	— 2.0	352

1. GNP in 1960 prices.

TABLE 12. EXPENDITURE OF PUBLIC ADMINISTRATIONS FOR EDUCATIONAL, CULTURAL AND ECCLESIASTICAL MATTERS

COUNTRY	1957			1959		
	IN CURRENCY OF THE COUNTRY[1]	IN RATIO TO TOTAL EXPENDITURE	AS A PERCENTAGE OF GNP	IN CURRENCY OF THE COUNTRY[1]	IN RATIO TO TOTAL EXPENDITURE	AS A PERCENTAGE OF GNP
Germany	7729	9.0	3.5	9125	8.9	3.5
France	6832	8.1	3.2	9346	8.8	3.5
Italy	499	8.9	3.1	640	8.9	3.5
Netherlands	1755	12.0	5.0	1994	12.4	5.2
Belgium	18505	11.9	3.6	23380	12.3	4.4

1. In millions of the currency of the country (Italy : in billion).
Source : Einnahmen und Ausgaben, Vol. II, p. 119.

2. RESULTS

The results of these calculations can be seen in absolute values in the third line of Table 13. Edding and Albers estimated the 1970 requirements to be DM 22.5 billion. The Ministers of Education calculated the figure to be DM 3.3 billion less. The Edding and Albers figures are in 1957 or 1959 prices[1], those for the Ministers are in 1961 prices[2], while the estimates of the GNP, it must be remembered, were calculated at 1960 prices. The two estimates differ considerably. Based on the actual expenditure of 1959, the Ministers expect an increase in expenditure requirements of 111 per cent, while Edding and Albers expect an increase of 147 per cent.

Setting aside demographic and sociological developments, these costs are determined above all by the quality of the educational institutions, e.g. how many pupils form a class, what is the standard of the equipment for special studies, and what are the endowments of research institutions. What school standards did the authors of these two studies have in mind ?

Edding and Albers apply the expenditure per pupil in a city with comparatively high standards to the estimate of total enrolment in 1970[3]. Their model was the city of Hamburg. In addition, they forecast a number of improvements[4].

The Ministers have separated their calculations according to desired and average values. Desired values (Zielwerte) are arrived at by indices of items pedagogically desirable, but not unrealistic aims[5]. The average values (Mittelwerte), on the other hand, are based on index figures already reached by some Länder and aimed at, by the end of this decade, by all Länder[6].

When quoting the Ministers, we have taken their average values. We may well consider that the values thus obtained (DM 19.2 billion) represent the minimum financial endeavours to be undertaken[7].

The DM 22.5 billion of Edding and Albers, on the other hand, are more likely to represent what is pedagogically desirable. The Ministers of Education, if we apply our calculation procedure to their desired aims, would require as much as DM 23.2 billion.

We shall limit the discussion to a comparison of the two estimates (Edding and Albers and the Ministers), as shown in Table 13.

Educational expenditure has once again been expressed as a proportion of GNP and of total public expenditures. Table 14, which is based on the values of Table 13, summarizes the results. In both tables, we showed the forecasts of the GNP based on our two growth hypotheses (A) and (B). There is in principle no difference between the results of the two hypotheses, so that henceforth we will omit hypothesis (A).

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[1] Cf. Edding and Albers, *Schulausgaben 1960/1970*, pp. 27 and 64.

[2] Cf. *Bedarfsfeststellung 1961/1970*, p. 6.

[3] Edding and Albers, *Schulausgaben 1960/1970*, p. 24.

[4] Cf. *Ibid.*, pp. 25 et seq.

[5] *Bedarfsfeststellung 1961/1970*, p. 16.

[6] *Ibid.*

[7] It should be noted that the Educational Ministers themselves estimate the *total* spending to be DM 19.9 billion (average values). This is all the more remarkable since they considered only the expenses of the Länder and municipalities but not those of the Federal Government. On the other hand, they obviously foresee a higher increase in spending for scientific research (an item not belonging to school expenses) than in school expenses. The difficulties of comparison mentioned above unfortunately prevent us from working directly with these figures.

The findings of both Edding and Albers and the Ministers conclude that educational expenditure must increase in absolute as well as in relative terms. Compared to the GNP, Edding and Albers (line 11 of Table 14) suggest an increase from 3.5 per cent in 1959 to 5.3 per cent in 1970 ; in the opinion of the Ministers, an increase to 4.5 per cent would be sufficient. In other words, Edding and Albers forecast a need to increase the share by 51 per cent (line 12 of Table 14) while the Ministers would content themselves with an increase of 29 per cent.

The changes with relation to total public expenditure vary from 8.9 to 13.2 per cent (Edding and Albers) and to 11.2 per cent (Ministers) (line 21 of Table 14). Here the desired increase is somewhat smaller ; a natural consequence of our assumptions concerning the future development of total public expenditures.

3. CONCLUSIONS

Let us assume the needs, as described in the two studies, as given[1]. Let us further assume that these needs will be met. What conclusions follow from these assumptions ?

As mentioned above, the expenditures for educational and cultural affairs in the Federal Republic have to be increased considerably. The chances are great that this increase will not be borne chiefly or to a considerable part by direct private effort, since that shift would be contrary to the traditional distribution of tasks in this country. Therefore, the public budget must be prepared to meet these increases.

In accordance with the EEC projection, we will start our assumptions with an estimate of GNP for 1970 of 102 billion US dollars, or 427 billion Deutschmarks according to the applied rate of exchange. Such GNP yields 14.0 billion DM for educational expenditures, using the 3.5 per cent rate of 1959. This amount must be compared with the 22.5 billion of the Edding-Albers « requirements » and 19.2 billion for the Ministers.

One way to adjust the discrepancy would be through a greater participation of public expenditures in the national product. For the period 1957-1962, the expenditures of public administrations amounted to an average of 39.2 per cent of the GNP. That rate in 1970 would mean 167 billion DM for public expenditures. The 1959 share of public expenditures for educational and cultural matters was 8.9 per cent. In 1970, such a « conventional » share would yield only 14.9 billion DM, or a deficit of 7.6 billion from the Edding-Albers « needs » and 4.3 billion from the needs estimated by the Ministers.

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[1] Public needs, in themselves, are nearly unlimited. This applied to partial activities, too, e.g. educational and cultural matters. Therefore, the « needs » of 1970 can only be quantified on the basis of goals decided outside our province. For identical goals, only one estimate can be correct. Divergence in the calculation of requirements can be explained in two ways : firstly, different goals ; secondly, insufficient information about the implications of realising these goals.

If, on the other hand, public expenditures were to increase by an amount just sufficient to cover these deficits, then public expenditures in 1970 would increase to 175 billion or 41 per cent of GNP for the Edding-Albers figures, and 171 billion or 40.1 per cent for the corresponding figures of the Ministers. These results should be compared with our projection of an increase in the rate of such public expenditures to the 40 per cent level.

TABLE 13. GERMAN FEDERAL REPUBLIC :
DEVELOPMENT OF EDUCATIONAL EXPENDITURE 1957-1970

In billions of DM.

	1957	1959	1970	
			HYPOTHESIS A	HYPOTHESIS B
1. GNP	225.4[1]	261.5[1]	413.7[2]	426.7[2]
2. Total public expenditure	86.0[3]	102.4[3]	165.5[4]	170.7[4]
3. Total educational expenditure .	7.7[5]	9.1[5]	Edding and Albers	22.5[6]
			Ministers (averages) . . .	19.2[7]

1. In current prices.
2. EEC projection converted into DM (See Table 1).
3. See Table 2.
4. Calculated on basis of our projection.
5. See Table 12.
6. Calculated by converting the growth expected by Edding and Albers for certain educational expenditures into total educational expenditures, at 1957 and 1959 prices.
7. Calculated by converting the growth expected for certain educational expenditures by the Permanent Conference of Ministers of Education into total educational expenditures, et 1961 prices.

Source : Einnahmen und Ausgaben, Vol. I, p. 13.

The conclusions to be drawn from these estimates are that public expenditure must rise more rapidly than GNP. In order to satisfy the conditions suggested by Edding and Albers, it would be necessary to assume an even faster growth in public expenditures than that determined by our « realistic » judgment projection. The necessary additional funds should not, however, destroy the conventional framework of expenditure in the countries we have reviewed here.

Thus we come to the question of how financing may proceed. Professor Willi Albers figured out that elasticity in tax revenue with regard to the change in national income can be calculated as follows :

$\mu\ T, E$[1]	Federal Republic . . .	1.1
	Länder	1.4
	Municipalities	1.3

Education, it must be remembered, is only one of the tasks facing public administrations. For various reasons, a distribution of types of taxes in such a way that the Federal Government is confronted with the lowest yield elasticity is somewhat disturbing.

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[1] $\mu\ T, E$ indicates the percentage change in tax revenues for a one-per-cent change in national product.

TABLE 14. GERMAN FEDERAL REPUBLIC : DEVELOPMENT OF EDUCATIONAL EXPENDITURE 1957-1970

		1957	1959	1970			
				HYPOTHESIS A		HYPOTHESIS B	
				EDDING ALBERS	MINISTERS	EDDING ALBERS	MINISTERS
1. 11.	Educational expenditures[1] as a percentage of GNP	3.4	3.5	5.4	4.6	5.3	4.5
12.	Percentage change in 11. above compared with 1959 figures . . .			+54	+31	+51	+29
2. 21.	Educational expenditures as a percentage of total public expenditures	9.0	8.9	13.6	11.6	13.2	11.2
22.	Percentage change in 21. above compared with 1959 figures . . .			+53	+30	+48	+26

[1] Total expenditure of educational administrations as well as those liabilities connected with activities in fields generally imputed to the educational and cultural sector. *Einnahmen und Ausgaben,* Vol. II, p. 116.

On the other hand, since expenditure for education and culture are borne mainly by the Länder and the municipalities, it might be hoped that the financing of the increased requirements for education and culture would not be too difficult.

However, the intergovernmental fiscal relations (Finanzausgleich) in Germany do not function as well as could be desired, and the prospects are, in fact, not so favourable. While revenues in municipalities and Länder altogether may have greater yield, this does not signify that funds are available in the areas where they are most needed. Instead, the differences among localities lead to the expectation of greater discrepancies between the needs on the one hand and the possibilities for public revenue on the other. These conditions will not fail to hamper the expansion of educational and cultural activities.

There are two principal possibilities to provide for the additional educational outlays. The first is to increase public expenditure on the whole. The second consists in expanding the educational outlays at the expense of other sectors while keeping the budget's volume constant. Between these two methods lies a multitude of combinations which could be applied.

Finally, from the viewpoint of political expediency, the established cited requirements cannot be considered as an unalterable unit in determining the budget. The amounts for public expenditure on education and culture which are considered to be just might well fall below our figures, and might just as easily exceed them.

It must be kept in mind that our figures tried to establish the liabilities for national budgets in 1970. The increased demands for education and culture will, however, make themselves felt long before that time.

Chapter 17

EDUCATIONAL EXPENDITURES IN THE COUNTRIES OF THE MEDITERRANEAN REGIONAL PROJECT

by

Secretariat of the Directorate for Scientific Affairs

INTRODUCTION

The objective of the first phase of the Mediterranean Regional Project (MRP) was to establish the long-term development objectives of the educational systems of the six participating countries in the light of economic and social development targets[1]. The educational development programmes, covering the period 1961 to 1975 or thereabouts, were based mainly on long-term demographic, economic and manpower projections[2]. The increased need for qualified personnel by level and type of education were « phased » over the projection-period in terms of flows of graduates, first enrolments, etc. These estimates of requirements were based on the present educational system and its current trends but recognised, where necessary, the need for qualitative improvements. The final operation consisted in calculating the cost implications of the programme.

The required expenditure for education was calculated first, on the basis of estimates of average salary and unit costs and then weighted by pupil, teacher and construction needs, to derive estimates for total expenditure on education and for educational expenditures by the public authorities. A more complete explanation of the techniques used follows.

As shown in Table 1, total expenditure on education is required to grow at the very high rate of about 11 per cent per year, if the targets are to be reached. This would be in conjunction with very high growth targets for GNP of more than 6 per cent per year. Thus the elasticity with income would be over 1 per cent for Turkey and Yugoslavia, 1.6 per cent for Greece and 2.1 per cent for Portugal and Spain over the projected period.

Table 2 shows the proportion of GNP devoted to educational expenditure now and estimates for the mid-1970's. From present levels, well below those of most OECD countries, the MRP countries are proposing to devote 4 or 5 per cent of GNP to education, a figure in line with that of the rest of Western Europe.

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[1] The MRP reports, ***Education for Economic and Social Development — Greece, Italy, Portugal, Spain, Turkey and Yugoslavia,*** **OECD, 1965.**

[2] **H. S. Parnes,** ***Forecasting Educational Needs for Economic and Social Development,*** **OECD, Paris, 1962, and the six MRP reports cited above.**

The part played by government expenditure in so great an expansion, will have to be very important since the burden of these increases is expected to fall mainly on the public sector. At the moment private education plays a fairly important part in Greece, Portugal and particularly Spain. It is not anticipated that the share of private educational expenditure can increase so that public educational expenditure must grow at an even faster rate than total expenditure on education.

There are two implied alternatives for dealing with this estimated increased burden. The first is that total public expenditure will remain at the same level in proportion to GNP as it is now, and a far greater share of it will go to education. On the basis of this assumption 30 per cent of public expenditure in Spain and Portugal would be devoted to education and around 20 per cent in the other countries. This compares with 10 per cent and 15 per cent in the early 1960's.

The other alternative is that other public expenditures should increase at the same rate as that on education. It seems likely that in a rapidly developing economy there will be many projects. housing, defence, health and welfare services, argicultural reform, roads and irrigation, all making equally strong claims on the public purse. If in fact total public expenditure were to increase at the same rate as public educational expenditures (excluding subsidies), public expenditure would form an extremely high proportion of GNP. In fact, a combination of these alternatives, or other less orthodox financing methods (such as the Yugoslav experience of Enterprise financing) must be found if these targets are to be reached.

It is necessary to emphasise the tentative character of these cost estimates. This is due mainly to the lack of sufficient data describing the present situation and to the length of the time-period involved, but should not be given too much importance. It was certainly not the MRP's objective to forecast precisely the required expenditure on education for the year 1975. Apart from the impossibility of this, its practical importance is small. As mentioned above, the main objectives of the MRP have been to indicate how the different levels and types of education should develop in the light of : (*i*) economic and social development objectives ; (*ii*) the internal balance of the educational system and (*iii*) the present qualitative deficiencies of the system.

The second stage of the MRP, which has recently started, will be more operationally oriented, and will go into more detail on the cost and finance of education. The time-periods covered will be shorter.

The six MRP reports did not discuss in any detail the question of the fiscal implications of the educational programmes. Mr. Vaizey's paper is therefore the first attempt to deal with this problem.

Several of the important questions that should be discussed in such a paper are mentioned below :

a) *The problem of centralisation versus decentralisation.* In general there seems to be a tendency to ask more funds from central government sources. The Yugoslav educational system, however, has experienced a remarkable expansion within the framework of a very decentralised system. The Turkish MRP report, noting that educational finance comes mainly from central government sources, urges a shift to local government finance, particularly at the primary level.

b) This raises the more general problem of *fiscal reform* and of whether the budgetary systems are in line with the objectives laid down by economic and educational development programmes. Therefore the questions of necessary changes in the legal framework of taxation will have to be considered as well as the responsiveness of taxes to changes in income.

c) Educational outlays (because they supply skilled manpower to the economy) are considered, among other things, as a means of fostering economic growth, so that *the contribution which enterprises can make to training and the financing of training needs to be considered.* To encourage such contribution, the government might consider incentives in the form of tax reductions for physical investments and the transfer of the financial resources which have thus become available to human capital formation.

d) *Other means to increase educational funds :* credit facilities (aside from tax sources) available to public authorities ; the financing of school construction in given areas by local bonds.

EDUCATIONAL EXPENDITURE ESTIMATES

The MRP teams used various techniques to find the estimated requirements of graduates of different kinds, and to estimate the size of the educational systems in the mid-1970's in the light of long-term targets for economic and social development. In five of the six countries, a target for the growth of Gross Domestic Product was taken ; the industrial composition of GDP was estimated and labour productivity targets were fixed in line with total manpower projections calculated from demographic data. The present occupational structure of branches of industry was derived from census data. An estimate was made of this structure in the target year, on the basis of the productivity targets, surveys, international and interindustry comparisons. For Greece, Spain and Yugoslavia, this occupational structure was then related to educational qualifications. The difference between base- and target-year qualified personnel was then calculated with suitable corrections for the replacements of those graduates who leave the labour force. In Italy and Turkey graduate needs are based on the data showing the occupational destinations of those leaving the educational system in the past, related to the total needs for such qualified personnel. Portugal's estimates of needs for graduates are based on an estimate of the educational attainment of the labour force in 1975 and the difference between this and the situation in 1960.

The figures for graduates are then translated into estimates for total enrolments. This step must take into account not only an improvement in drop-out and the proportion of students repeating a class but also the balance within the system between types of education and the satisfaction of certain social targets only indirectly related to manpower requirements (such as increased compulsory education, changes in entry requirements, etc.). These total enrolment figures imply teacher, equipment and building needs, both in the light of long-term targets for economic and social development to meet the required number of pupils and to improve the quality of education (larger teacher-pupil ratios, smaller classes, new and better buildings, more equipment).

The most usual method is to calculate average teacher salaries for the different levels, raising them more or less to the level of income necessary to attract teachers. These are then inflated by the number of teachers to calculate teacher costs. These are used as the basis of total expenditure on the assumption that « other current expenditure » bears a fixed relation to total current expenditure. Capital expenditure is calculated by the estimated cost per student place ; the new places required and replacements during the period forecast are calculated, and the building phased over the period.

METHODS OF ESTIMATING EDUCATIONAL EXPENDITURES

Details by Country

Greece

Current Expenditure. Estimates were made for different levels and for public and private schools. Public estimates allowed for a teacher salary rise of 6 per cent per annum and salary costs : other expenditure ratio was unchanged from the base year. Private estimates assumed a total cost increase per pupil of 5 per cent.

Capital Expenditure. Annual replacement covered 2 per cent of stock in 1960 and a certain number of places considered unfit for use.

Portugal

Current Expenditure. Official estimates are made for the public sector alone. Teachers' salaries are considered likely to grow rather more than per capita income, i.e. 5.0 per cent rather than 4.5 per cent per annum ; in addition a change in the qualifications structure within levels is estimated, thus further increasing average salaries. The relationship between other current expenditure and salary costs are assumed to follow past trends.

Capital Expenditure. Capital expenditure is based on cost-per-student-place estimates, phased constantly rather than by project. Replacements are estimated on the basis of existing installations.

Spain

Although no private expenditure data are available for Spain for the base year, estimates for 1975 take into account both public and private education.

Current Expenditure. After an initial increase, average salaries are to be increased at the same rate as per capita income. Other current expenditures bear a constant relationship to teachers' salaries.

Capital Expenditure. This has been based upon cost-per-student place estimates. In the calculation of additional building requirements, both replacements and more intensive utilization of existing capacity have been taken into account.

Turkey

Current Expenditures. Estimates are based on salaries increased to compensate for the fall in real incomes during 1950-61 and to keep abreast with per capita income increases. Increases will be made at 3-5 year intervals. It seems, though this is not stated explicitly, that other general expenditures are calculated separately on a per-pupil basis and held absolutely constant.

Capital Expenditure. Cost per student place is used to calculate the cost of new places. Larger investment projects have been realistically phased through the period. Replacement is taken as 1 per cent per annum of existing buildings (1962) and 5 per cent of existing equipment, and repairs will require another 5 per cent of expenditure on new buildings

Yugoslavia

Current Expenditure. Teachers' salaries are expected to rise in harmony with the rise in per capita income. Other current expenditure is calculated *per pupil,* and because of the deficiencies in equipment will be expected to increase considerably.

Capital Expenditure. This is based on school space per pupil and cost per square metre. Replacement is based on 1.58 per cent per year of the stock in 1962, and allowance is also made for the elimination of shifts in schools.

TOTAL PUBLIC AUTHORITIES' EXPENDITURE

Details by Country

In order to relate educational to available expenditure, total public expenditures were examined. Greece was the only MRP report which contained an estimate of total public expenditure for the 1970's. The Turkish State Planning Organisation set public expenditure targets for 1977. To achieve a comparable figure for public expenditure for the 1970's for the other MRP countries, an estimate was made which assumed that these expenditures would increase at the same rate as GNP, or, in other words, would remain at a fixed proportion of gross national product. This is a conservative and rather unrealistic assumption in view of the traditional shift towards the public sector for developed countries (See Table 3). For the estimates of government expenditure, shown in Tables 3 and 4, the following assumptions were made :

Greece

Base year data came from the MRP report and from National Accounts data. For 1974 estimates, the total public expenditure on goods, services and investment (« direct expenditures ») was given in the MRP report ; defence expenditure was assumed to be the same percentage of GNP as in 1961, and public « indirect[1] » expenditure to bear the same relation to « direct » expenditure.

Portugal

Base year data came from *Statistics of National Accounts 1950-1961*, and for 1975 the various aggregates are assumed to bear the same relationship to GNP.

Spain

The only public expenditure figure available is the State Budget which probably under-estimates state expenditure. Defence expenditure was assumed to be about 4 per cent of GNP and the same relationships were applied to 1975's GNP.

Turkey

The only government expenditure data came from the First Five Year Development Plan, and were comparable with figures in National Accounts Data, being « direct » expenditures. However, the figures for 1977 from the Plan show a very high proportion of GNP, although they have been calculated as part of final demand. It is, in fact, higher than the proportion in a socialist economy such as Yugoslavia. If allowance is to be made for transfer payments, government expenditure will be extremely high, unless Turkey hopes to be free from subsidies, pension payments and other forms of social security, which at present account for between 8 per cent and 20 per cent of OECD countries' GNP.

Yugoslavia

1962 figures come from unpublished national accounts data ; for 1975, the same proportions of GNP were assumed. It is interesting to note that the MRP report does not anticipate more than a small increase in the size of the services branch, which, in socialist Yugoslavia, contains most of the elements which contribute to public expenditure.

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[1] Transfer expenditures.

DATA AND DEFINITIONS

Educational expenditure is defined generally as including salaries and general expenses in all types of recognised institutions, central administration, rents, maintenance and repairs, etc., and capital expenditure.

Greece

Public educational expenditure includes all the above expenditures financed directly by government, including scholarships. Total educational expenditure included scholarships and subsidies. Expenditure is at constant 1961 prices.

Portugal

For 1960 public education includes subsidies to the private sector. Total expenditure is, for 1975, net of these subsidies ; for 1960 and 1975 an estimate has been made for private current educational expenditure based on statistics of teachers in the private sector. This is approximate since most of these teachers are unpaid. A figure for private capital expenditure for 1960 was available but there was none for the future. Expenditure is at constant 1960 prices.

Spain

No special data are available for public education for 1975, so a minimum condition has been assumed, i.e., that public education expenditure will be the same proportion of total expenditure as it was in 1962.

Total expenditure is given as a rounded total for 1962 and in detail for 1975. The total for 1962 agrees with an estimate made separately by the Secretariat. Expenditure is at constant 1962 prices.

Turkey

As the amount of private expenditure on education is negligible, we have had to consider only government expenditure. The coverage is not stated, but presumably includes administration and investment expenditure ; the figures are at 1961 constant prices.

Yugoslavia

As with Turkey, public expenditure is total expenditure ; the coverage of data is not defined ; they are at 1962 constant prices.

EXAMINATION OF SOME IMPLICATIONS OF THESE ESTIMATES

As can be seen from Table 1, the Mediterranean countries have set target growth rates of GNP ranging from 5.4 per cent per annum to 10 per cent per annum, all far higher than any sustained growth rates for the total OECD area during the past decade[1]. Even those European countries with the greatest constant expansion, the EEC Member countries, have not exceeded an average annual rate of growth of GNP of more than 6.2 per cent over any 5-year period since 1950. The MRP countries are therefore setting themselves high targets. Total educational expenditure is expected to grow to 4-5 times its present amount in four of the six countries, increasing nearly twice as fast as GNP. Thus, in both absolute and relative terms, a far greater part of resources is going to be devoted to education, and will have to be if the qualified personnel needed to support this high level of growth are to be made available.

TABLE 1. AVERAGE ANNUAL RATES OF CHANGE IN GNP ; PUBLIC EXPENDITURE ; TOTAL EDUCATIONAL EXPENDITURE ; AND PUBLIC EDUCATIONAL EXPENDITURE

COUNTRY	PERIOD	GNP	PERCENTAGE PER ANNUM		
			TOTAL PUBLIC EXPENDITURE	TOTAL EDUCATIONAL EXPENDITURE	PUBLIC EDUCATIONAL EXPENDITURE
Greece	1961-1974	6.7	6.3	10.6	10.9
Portugal	1961-1975	5.4	n.a.	11.4	12.2
Spain	1962-1975	6.0	n.a.	12.6	n.a.
Turkey	1962-1977	7.0	9.7	8.7	8.7
Yugoslavia	1962-1975	10.1	n.a.	12.8	12.8

In all countries much of the burden of educational expenditure is borne by the government sector. The following figures show the proportion of total enrolments attending publicly administered institutions in 1960-61 : Greece 88.5 per cent ; Italy 88.6 per cent ; Portugal 92.5 per cent ; Spain 67.6 per cent ; Turkey 99.5 per cent ; Yugoslavia 100 per cent. In most cases private education is most common in the cheaper types of education — primary and secondary general — so that the proportionate weight of the governments' effort is going to be even greater. If the proposed expansion is to be made, the governments' share in educational expenditure must increase still further, either directly, or indirectly through grants and subsidies to the private sector. Thus, as can be seen, public expenditure on education is expected to grow even faster than total educational expenditure with an annual growth of between 9 and 13 per cent per annum and probably still higher than has been assumed in Spain, which has at present a large private sector which will probably decrease in relative size, since it is strongest in those types of education which are expected to expand the least[2].

Table 2 shows the total expenditure on education as a percentage of GNP. From past studies it seems likely that for most developed countries this figure is about 5 per cent, although lack of standardised statistics make more detailed estimates unreliable. In the MRP area, expenditure on education takes between 2 per cent and 4 per cent of GNP, ranging from Spain with 1.8 per cent to Turkey, Yugoslavia and Italy with about 4 per cent. Since the figures for Italy are not on a comparable basis, we have concentrated on the other five countries, where the problems are probably greater.

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[1] See *Statistics of National Accounts 1950-61*, OECD, 1964.

[2] Spain, private enrolments as a percentage of total : 1960 Primary 24 per cent, Secondary General 81 per cent, Technical and Vocational 39 per cent, Higher 1 per cent.

TABLE 2. TOTAL EDUCATIONAL EXPENDITURE AS A PERCENTAGE OF GNP IN THE MRP COUNTRIES : 1960-1962 AND 1974-1977

COUNTRY	YEAR	RATE	YEAR	RATE
Greece	1961	2.1	1974	3.2
Portugal	1960	2.3	1975	5.2
Spain	1962	1.8	1975	4.0
Turkey	1962	3.7	1977	4.7
Yugoslavia	1962	3.8	1975	5.2

By the mid 1970's educational expenditure as a percentage of GNP will be much nearer the accepted 5 per cent, except in Greece and Spain where it will be 3.2 per cent and 4 per cent respectively. The smaller percentage in Greece is probably due to the assumptions concerning teacher salary increases. Had salaries increased faster than per capita income, this percentage would be higher. In addition, Spain and Greece anticipate a smaller increase in the number of teachers than do the other countries. Spain, Turkey and Portugal assume rises in teacher salaries greater than in per capita income and Yugoslavia already devotes a larger percentage of GNP to educational expenditure, so that the difference between 1962 and 1975 is smaller ; the increase in relative effort will be much greater in Spain and Portugal than in Turkey and Yugoslavia. (See Table 2).

Since so much of educational expenditure is financed by government, the relationship between total public expenditure and GNP must be considered. Data are given for all OECD countries for different aggregates :

i) public current expenditure on goods and services and public gross fixed asset formation ;
ii) public current expenditure (including transfers) and public gross fixed asset formation ;
iii) public current expenditure on goods and services and public gross fixed asset formation less current expenditure on national defence ;
iv) public current expenditure (including transfers) and public gross fixed asset formation less current expenditure on national defence.

In the MRP reports, public current expenditure on goods and services and gross fixed asset formation, is used as a basis for measuring public expenditure on education. However, in most cases, ***scholarships*** are included in public educational expenditure, and so it would seem more relevent to take the whole of public current expenditure since this includes all current transfers. In addition, adjustment may be made for defence expenditures. The importance of these differences is shown in Table 3. The MRP countries rank fairly high in the proportion of direct government expenditure in GNP (column 2) even allowing for defence expenditure (column 3). However, as both the Spanish and Portuguese reports mention, transfer payments will play an increasingly important part in educational financing ; from what data are available in the Mediterranean countries — apart from Yugoslavia — government expenditure appears to be a lower percentage of GNP than in the rest of the OECD area when adjustment is made for defence expenditures. In Portugal this figure is particularly low (only 15.2 per cent of GNP), and in Spain it is probably of the same order.

TABLE 3. PUBLIC EXPENDITURES AS A PERCENTAGE OF GNP IN THE OECD COUNTRIES, 1961

COUNTRY	PUBLIC EXPENDITURE ON GOODS, SERVICES AND INVESTMENT		TOTAL PUBLIC CURRENT EXPENDITURE, AND INVESTMENT	
	WITH DEFENCE	WHITOUT DEFENCE	WITH DEFENCE	WHITOUT DEFENCE
Austria	16.3	15.2	29.1	28.0
Belgium	13.6	10.7	28.4	25.5
Canada	18.6	13.9	31.1	26.4
Denmark	15.7	14.1	25.9	24.3
France	15.8	10.3	34.4	28.9
Germany (F.R.)	17.4	13.7	32.8	28.1
Iceland	12.2	12.2	21.7	21.7
Ireland	13.9	12.8	27.1	26.0
Italy	17.3	13.3	29.7	25.7
Netherlands	18.2	12.5	32.5	26.9
Norway	17.8	14.6	30.9	27.7
Sweden	20.4	16.0	32.3	27.9
Switzerland	13.1	10.6	22.2	19.7
U.K.	18.9	12.5	32.3	25.9
U.S.A.	22.1	12.4	29.9	20.2
MRP countries (excluding Italy)				
Greece	20.5	15.9	29.0	24.4
Portugal - 1960	14.2	10.7	18.7	15.2
Spain - 1962	11.8	7.8	n.a.	n.a.
Turkey - 1962	19.0	14.4	n.a.	n.a.
Yugoslavia - 1962	22.4	16.2	33.9	27.7

Notes and Sources : *OECD other than MRP* : data from *Statistics of National Accounts 1950-1961* ; for the Netherlands, the Secretariat prepared an estimate for defence expenditure based on past trends : for Italy, defence expenditure is assumed to be 4 per cent of GNP.

MRP countries : see the text.

For the target year, estimates of the size of the public sector are available only for total public direct expenditures for Greece. From other economic estimates for Yugoslavia, it appears that government services will be of approximately the same order in 1975 as in 1962. From Turkey there is a fairly high 1977 estimate for public expenditure on goods and services and investment[1] (29 per cent of GNP in 1977) which may include investment in state enterprises (the highest figure in the OECD in the early 1960's is 22.4 per cent for Yugoslavia). The implications of these data are shown in Table 4, which gives the percentage of total public educational expenditure in total public expenditure. In the base year the proportion of public direct expenditure going to education is between 8 per cent and 19 per cent ; allowing for defence, between 10 per cent and 25 per cent. In relation to total public expenditure including indirect payments, the range of amounts going to education is still lower even in those countries where government provides all education.

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[1] *First Five Year Development Plan* 1963-1967, page 34.

This is in contrast to the target year figures. If in those cases where there are no other data given it is assumed that public expenditures have remained at a constant level in relation to GNP, then educational expenditures are going to consume a very large proportion of public resources. In Spain and Portugal over 40 per cent of direct expenditure on goods, services and investment for civil purposes would have to be devoted to education. If on the other hand, as is more likely, those other expenditures, which with education form public expenditure, are going to expand as fast as education, then the total amount of public expenditure will be very large. There are going to be claims for expenditure on housing, defence, health and welfare services, agricultural reform, roads and irrigation works, as well as education. If total public expenditure were to expand as

TABLE 4. PUBLIC EDUCATIONAL EXPENDITURE AS A PERCENTAGE OF TOTAL DIRECT PUBLIC EXPENDITURE, AND TOTAL PUBLIC EXPENDITURE INCLUDING CURRENT TRANSFERS, INCLUDING AND EXCLUDING DEFENCE

COUNTRY	YEAR	PUBLIC EDUCATIONAL EXPENDITURE AS A PERCENTAGE OF			
		PUBLIC EXPENDITURE ON GOODS, SERVICES AND INVESTMENT		TOTAL PUBLIC CURRENT EXPENDITURE AND INVESTMENT	
		WITH DEFENCE	WITHOUT DEFENCE	WITH DEFENCE	WITHOUT DEFENCE
Greece	1961	8.2	10.5	5.8	6.9
Portugal	1960	13.3	17.6	7.1	8.7
Spain	1962	9.3	14.1[1]	n.a.	n.a.
Turkey	1962	18.9	25.0	n.a.	n.a.
Yugoslavia	1962	16.1	22.2	10.6	13.0
Greece	1974	14.4	18.1	10.2	12.1
Portugal	1975	32.1	42.6	24.4	30.0
Spain	1975	29.1	44.3[1]	n.a.	n.a.
Turkey	1977	(16.2)	(21.5)	n.a.	n.a.
Yugoslavia	1975	23.3	32.2	15.4	18.9

1. Assuming that Spain devotes 4 per cent of GNP to defence expenditure.

Source : 1960-1962 data ; *Statistics of National Accounts 1950-1961 ; First Five Year Development Plan (Turkey) ;* MRP reports.
1974-1977 data ; the percentage of public expenditures in GNP are assumed to remain at the base year level.

fast as education expenditure, then public expenditure would be the following percentages of GNP : Greece, Portugal, Yugoslavia, 32 per cent ; Spain 37 per cent ; Turkey 25 per cent ; all these figures are very much higher than the 12-22 per cent range for the OECD countries shown in Table 3.

TABLE 5. TOTAL PUBLIC EXPENDITURE AND PUBLIC EXPENDITURE AS A PERCENTAGE OF GNP ; PUBLIC EDUCATIONAL EXPENDITURE AS A PERCENTAGE OF TOTAL PUBLIC EXPENDITURE

GREECE 1961 AND 1974

YEAR CURRENCY	1961 IN MILLION DRACHMAE 1961 PRICES	1974 IN MILLION DRACHMAE 1961 PRICES
a) *Total Expenditure on Education*	2.235	8,245
b) Current	1.895	6.520
c) Capital	340	1.725
d) *Public Expenditure on Education*	1,837	7,050
e) Current	1.568	5,500
f) Capital	269	1,550
g) *Total Public Expenditure*	22,300	49,000
h) *GNP*	108,800	254,400
Total public expenditure as a percentage of GNP (g : h)	20.5 %	19.3 %
Total educational expenditure as a percentage of GNP (a : h)	2.1 %	3.2 %
Public educational expenditure as a percentage of total public expenditure (d : g)	8.2 %	14.4 %

TABLE 6. TOTAL PUBLIC EXPENDITURE AND PUBLIC EXPENDITURE AS A PERCENTAGE OF GNP ; PUBLIC EDUCATIONAL EXPENDITURE AS A PERCENTAGE OF TOTAL PUBLIC EXPENDITURE

PORTUGAL 1960 AND 1975

YEAR CURRENCY	1960 IN MILLION ESCUDOS 1960 PRICES	1975 IN MILLION ESCUDOS 1960 PRICES
a) *Total Expenditure on Education*	1,605[1]	7,870[1]
b) Current	1,230[1]	7,330[1]
c) Capital	375[1]	540[1]
d) *Public Expenditure on Education*	1,231	6,940
e) Current	909	6,400
f) Capital	322	540
g) *Total Public Expenditure*	9,819[2]	n.a.
h) *GNP*	69,122	152,100
Total public expenditure as a percentage of GNP (g : h)	14.2 %	n.a.
Total educational expenditure as a percentage of GNP (a : h)	2.3 %	5.2 %
Public educational expenditure as a percentage of total public expenditure (d : g)	13.3 %	32.1 %[3]

[1] Estimates for expenditures on private education were prepared by the Secretariat.
[2] Source : OECD questionnaire for National Accounts Statistics.
[3] On the assumption that the ratio of total public expenditures to GNP remains at the 1960 level.

TABLE 7. TOTAL PUBLIC EXPENDITURE AND PUBLIC EXPENDITURE AS A PERCENTAGE OF GNP ; PUBLIC EDUCATIONAL EXPENDITURE AS A PERCENTAGE OF TOTAL PUBLIC EXPENDITURE

SPAIN 1962 AND 1975

YEAR CURRENCY	1962 IN THOUSAND MILLION PESETAS 1962 PRICES	1975 IN THOUSAND MILLION PESETAS 1962 PRICES
a) *Total Expenditure on Education*	14.0	65.9
b) Current	12.5	61.1
c) Capital	1.5	4.8
d) *Public Expenditure on Education*	12.0	n.a.
e) Current	10.5	n.a.
f) Capital	1.5	n.a.
g) *Total Public Expenditure*	129.0	n.a.
h) *GNP*	775.8	1,648.0
Total public expenditure as a percentage of GNP (g : h)	11.8 %	n.a.
Total educational expenditure as a percentage of GNP (a : h)	1.8 %	4.0 %
Public educational expenditure as a percentage of total public expenditure (d : g)	9.3 %	29.1 %[1]

[1] On the assumption that the percentage of total public expenditure in GNP remains at the 1962 level, and that private expenditure stays constant in relation to public expenditure.

TABLE 8. TOTAL PUBLIC EXPENDITURE AND PUBLIC EXPENDITURE AS A PERCENTAGE OF GNP ; PUBLIC EDUCATIONAL EXPENDITURE AS A PERCENTAGE OF TOTAL PUBLIC EXPENDITURE

TURKEY 1962 AND 1977

YEAR CURRENCY	1962 IN MILLION T.L. 1961 PRICES	1977 IN MILLION T.L. 1961 PRICES
a) *Total Expenditure on Education*	1,950	6,817.4
b) Current	1,560	6,433.8
c) Capital	390	383.6
d) *Public Expenditure on Education*	1,950	6,817.4
e) Current	1,560	6,433.8
f) Capital	390	383.6
g) *Total Public Expenditure*	10,300	42,100
h) *GNP*	52,700	145,300
Total public expenditure as a percentage of GNP (g : h)	19.0 %	29.0 %
Total educational expenditure as a percentage of GNP (a : h)	3.7 %	4.7 %
Public educational expenditure as a percentage of total public expenditure (d : g)	18.9 %	16.2 %

TABLE 9. TOTAL PUBLIC EXPENDITURE AND PUBLIC EXPENDITURE AS A PERCENTAGE OF GNP ; PUBLIC EDUCATIONAL EXPENDITURE AS A PERCENTAGE OF TOTAL PUBLIC EXPENDITURE

YUGOSLAVIA 1962 AND 1975

	YEAR CURRENCY	1962 IN THOUSAND MILLION DINAR 1962 PRICES	1975 IN THOUSAND MILLION DINAR 1962 PRICES
a)	*Total Expenditure on Education*	157.3	755.7
b)	Current	115.3	547.3
c)	Capital	42.0	208.5
d)	*Public Expenditure on Education*	157.3	755.7
e)	Current	115.3	547.2
f)	Capital	42.0	208.5
g)	*Total Public Expenditure*	982.0[1]	n.a.
h)	*GNP*	4,150.0	14,489.9
	Total public expenditure as a percentage of GNP (g : h)	22.4 %	n.a.
	Total educational expenditure as a percentage of GNP (a : h)	3.8 %	5.2 %
	Public educational expenditure as a percentage of total public expenditure (d : g)	11.6 %	15.9 %[2]

[1] Source : OECD questionnaire for National Accounts Statistics.

[2] On the assumption that the percentage of total public expenditures in GNP remains at the 1960 level.

Chapter 18

THE FINANCIAL IMPLICATIONS OF THE MEDITERRANEAN REGIONAL PROJECT

by
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The general relationship of education to economic growth has been investigated under a number of heads.[2] It seems that education (of the correct type, and given to the appropriate social groups) is a necessary precondition of economic development, since the changes in social attitudes that are required must be based upon a system of formal and informal education. (Much education, however, is intensely conservative and may, therefore, handicap a growing economy.) More directly, the education system is an important source of skills, both general and specific. Indeed, this connexion between education and the economy has been the link usually analysed in detail by economists and human resource experts[3].

In addition, the relationship between education and economic growth may be analysed under two further heads. The contribution of education to the economy may be assessed by micro-economic or macro-economic techniques. Finally, as the economy grows so does the demand for education, and the requirements of education for resources may be assessed as a consumption good.

These four approaches suggest four separate ways of tackling analysis of the financial problems of education in a developing nation.

a) An analysis of the social preconditions of take-off may suggest a critical volume of educational inputs in real terms (after allowing for the character of the education) which will determine, within certain limits, the necessary expenditures on education for this purpose. Less education than this would be ineffective ; more would be a luxury. It might be, for example, that universal literacy was a prerequisite for growth. This is, however, an unlikely conclusion.

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[1] The author wishes to express his appreciation to Jane Sutherland of the OECD Secretariat who compiled the data on educational expenditures upon which much of this report is based.

[2] See T. W. Schultz, *The Economic Value of Education*, 1963, Selma J. Mushkin, *The Economics of Higher Education*, 1962, John Vaizey, *The Economics of Education*, 1962.

[3] See F. Harbison & C. Myers, *Education, Manpower and Economic Growth*, 1964.

b) The methods of financing the education system will affect the social distribution of education by families and (by affecting the flow of educated people into the labour market, as well as by the immediate effect of taxes levied to support education) these methods of finance will affect the distribution of incomes now and in the future.

c) An analysis of skills and their relationship to economic development will show, on certain assumptions, a desirable pattern of investment in education at various levels. The limitations of this approach (apart from the difficulty of making skill breakdowns, and projecting rates and directions of technological change) will be apparent, in that skill requirements are fixed by manpower planners according to technological data, and, unless the labour market works perfectly, in conditions of full employment there is no guarantee that the technological and the economic indicators will point in the same direction[1]. Consequently, unless the technological relationships are to be regarded as fixed regardless of market considerations, the totals of skill requirements, translated into requirements for educational finance, are only in a limited sense a guide to the appropriate levels of educational outlays.

The same criticism applies in reverse to the degree of optimalisation derived from calculations of the contributions to personal incomes contributed by education. The fundamental assumption — that the labour market works perfectly, in conditions of full employment and perfect competition — is invalid. At best, therefore, (and abandoning analytical rigour) one could say that this was an indication — and no more — of the appropriate amounts to spend on education[2].

d) Lastly, the social demand approach, that is, the amount required for consumption purposes, rests upon necessary assumptions about the price of education, which makes a great deal of the projection work depend upon circular reasoning, for the price of education must be affected (to some extent at least) by its demand.

Consequently, while it is obvious that there are interrelated aspects of economic growth and educational outlays, it is hardly yet possible to say that these connexions have been analysed sufficiently closely to provide a hard and fast guide to the optimum rate of outlay on education to achieve a desired rate of growth. (It is also fair to say that these limitations apply equally to the connexion between physical capital and economic growth, but the *tu quoque* is an inadequate form of argument.)

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[1] « The Labour Market and the Manpower Forecasts », *International Labour Review*, April, 1964.

[2] *The Study Group in the Economics Education, The Residual Factor and Economic Growth*, OECD, Paris, 1965.

THE MEDITERRANEAN REGIONAL PROJECT

The MRP is an OECD-sponsored project linking six countries. Teams operate in the national planning Ministries, educational Ministries and private research groups, to assess the possibilities of a fifteen-year programme of educational development[1].

« The Mediterranean Regional Project countries face a number of common problems. Despite fairly rapid economic growth during the post-war decade, they have lower per-capita incomes than the other Member countries of OECD. Large percentages of the labour force are engaged in agriculture : from over one-third in Italy to more than three-fourths in Turkey, and considerable disguised unemployment in the agricultural sector is common. There are extreme shortages of educational facilities and personnel. In terms of almost any measure of educational effort, e.g., enrolment ratios or educational expenditures as a proportion of gross national product, these countries have been among the lowest in Europe. At the same time, all are committed to maintain high rates of growth in the present decade and to achieve higher degrees of industrialisation, and they are cognisant of the implications of these objectives for the planning and development of their educational systems. A general framework for the contemplated educational planning has evolved. It has been agreed that the minimum specific objectives of each of the national research groups should be to :

a) Estimate for the 15-year period 1960 to 1975 the « required » number of graduates each year from the various levels of the educational system. For levels beyond the primary, these numbers must be broken down by broad subject matter area — at least into graduates of scientific and technical curricula and those of all other curricula, since the content as well as the costs of these two broad divisions of the educational system differ considerably.

b) Estimate, in the light of *(a)*, the numbers of teachers required in the several levels of the educational system. As in the case of students, teachers of pure and applied sciences at levels beyond the primary must be differentiated from all others.

c) Estimate, in the light of *(a)*, the number of additional classrooms, laboratories, school buildings and the amount of equipment required, and plan the optimum geographical distribution of such educational facilities in the light of anticipated population distribution and the distribution of existing facilities.

d) Assess the qualitative adequacy of existing educational programmes and make recommendations for needed improvements, including teaching methods and curriculum organisation.

e) Assess the need for new or expanded educational and training programmes outside of the traditional educational structure, such as adult education programmes, apprenticeship-training programmes, on-the-job training, *et cetera.*

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[1] The objectives of the MRP were summarised in *Forecasting Educational Needs for Economic and Social Development*, OECD, 1962, pp. 9-11.

f) Estimate the total capital and current costs of the expansion and improvement in education implied by the results of *(b) - (e).*

g) Establish a « time-table » for achieving the required expansion and improvements over the 15-year period and prepare annual budgets showing total required educational expenditures in absolute figures and as percentages of gross national product. »

THE PROBLEM

The burden of educational expenditure in the fifteen-year programme

Fundamentally, the MRP projections rely upon a two-fold assumption :

i) that the growth of demand for education will be a function of demographic trends plus a « social » trend loosely linked to economic growth — an increasing function of the rate of growth of GNP,

ii) that manpower projections will be the basis for the allocation of the major priorities in the expanded educational programme.

It is self-evident that these two assumptions can be reconciled only if *(a)* all education is undertaken with the aim of maximising income and *(b)* that the market for labour operates perfectly. Since neither *(a)* nor *(b)* is a realistic assumption, the reconciliation of the two objectives will always present problems for education policy.

The projections of educational « requirements » in the MRP countries present high totals, whether from the « manpower » or the « social demand » side. The totals are summarised in Table 2 of the Secretariat paper in this volume.

Outlays as a proportion of GNP are expected to increase by between 50 per cent and 100 per cent during fifteen years. (This is, of course, a proportion of an increased GNP so that total outlays will increase much more.)

This represents a substantial addition to the stock of qualified people. As the OECD[1] report previously quoted says « on the basis of targets for economic growth the required occupational composition of the labour force has been estimated for the forecast years (e.g. 1965, 1970 and 1975) and these data have been converted into the required structure of manpower for those years by level and type of education. At the same time, the *actual* structure of educational qualifications that will be produced by *existing* educational facilities has also been estimated for each of these years. The implication of the analysis is that if there are discrepancies between these two sets of estimates they must be eliminated if the production levels

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[1] ***Forecasting Educational Needs for Economic and Social Development*, OECD, 1962, p. 51 and p. 53.**

367

of the forecast years are actually to be achieved. The extent to which anticipated supplies of personnel with a given level of educational attainment fall short of estimated requirements is the measure of the degree to which the « output » of that level of the educational system must be expanded during the forecast period if production targets are to be achieved. Moreover, if there is in fact the rather rigorous link that has been assumed between productivity levels and occupational structure on the one hand, and between occupation and educational qualification on the other, then it follows that should the shortage of manpower in any of the education categories not be able to be overcome, the production targets which served as the basis for the entire exercise must be revised downward. »...

...« Once the required additional number of graduates from each of the levels and branches of the educational system has been computed it is necessary to convert these figures into annual data and to calculate the total additional enrolments that they imply. There are several « scheduling » problems that need to be kept in mind in this phase of the work. It is obviously impossible to spread the required number of graduates evenly over the 15-year period for which the forecast is made. For one thing, it requires some time for the necessary school facilities to be planned and constructed. For another, at each level of the educational system there is a time lag between the construction of the facility and the emergence of the first crop of graduates. Finally, a proper balance needs to be maintained among the several levels of the system. Where enrolment rates in higher secondary schools are low, university enrolments cannot be expanded significantly in the absence of a previous increase in secondary school enrolments. »

The burden in fiscal terms

The burden of this educational expansion may be analysed in real terms. There is the demand for teachers (much the biggest single sector of the stock of qualified manpower). There is the demand for schools and equipment. There is the cost of withdrawing people from the labour force in order that they may study. These costs are important.

But they neglect what may be the most important limitation — the fiscal burden. This is illustrated in Table 1 of the Secretariat paper page, which shows a growth rate of outlays on education through the fiscal system which, as noted above, is far higher than the (already high) anticipated rate of growth of GNP for these countries.

In all these countries the proportion of public expenditure devoted to education (on very limited assumptions, especially that the proportion of public expenditure to GNP does not change) will rise substantially (see Table 4 and for greater detail Tables 5-9 of the Secretariat paper).

It is fair to conclude that this fiscal burden is a serious one and deserves further analysis.

We now turn to the problems involved in forecasting educational « requirements » and of translating these requirements into fiscal terms.

THE METHOD OF FORECASTING EDUCATION REQUIREMENTS

Current Data

Sources[1]

Forecasting educational requirements depends upon an accurate assessment of the present situation and the recent past. One danger — an almost overwhelming one — is that it is habitual to use the present as a datum, although the existing situation may be extremely unsatisfactory, not only because of shortages, but because what is being done is wrong.

The data fall into three categories : education data, manpower data and economic and financial data.

The *education data* have to be collected on the basis of pupils, schools, examination results, etc. One immediate problem is that private education is often completely uncounted. So also — even if private education proper is in fact reporting data periodically — is « training on the job » ; for males, especially the training given at work may represent up to one-half of total outlays on education[2], so that one large area of education (and possibly the most economically effective) may not appear in the data at all.

Even within the public sector data on pupils and teachers are often most unsatisfactory. For example, if government grants to local committees depend on the number of pupils, there will be a serious danger of enrolment inflation[3].

If teachers' salaries are financed centrally, there will be a tendency to inflate the numbers of teachers.

Examination results (which are often an essential basis for predicting the flow of students for one level to another) are notoriously subject to statistically capricious variation from year to year. Consequently examination data may need very careful processing if it is to be useful.

Part-time students and part-time teachers represent a statistical problem which is among the most difficult to resolve.

In addition, from this basic data, the calculation of pupil-teacher ratios introduces the most difficult conceptual statistical problem, because the pupil-teacher ratio is usually the basis of most forward planning.

The *manpower data* represent a complex statistical problem.

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[1] I have not reviewed the evidence in detail as it is summarised in the Secretariat's paper.

[2] Jacob Mincer, *On the Job Training : Costs, Returns and Some Implications*, JPE (Supplement), October, 1962.
This view has been rebutted by Fritz Machlup, *The Production and Distribution of Knowledge in the US.*

[3] *Statistics of Education*, UNESCO, 1961.

The classification of manpower by skill and education level has formed a major part[1] of the Mediterranean Regional Project programme. The data themselves have to rely upon the census (or a special census of high-level manpower). For much of the programmes, however, estimates have to be made from incomplete observations[2].

The *economic and financial data* are derived from national income estimates which are subject to the many limitations enumerated elsewhere[3]. We do well to remind ourselves how imperfect these estimates are, for international comparisons are subject to serious compounding of original errors and areas of imprecision.

This applies especially to time-series, where price indices have to be applied. The difficulties of finding the appropriate exchange rate for these inter-temporal and international comparisons are familiar ; they apply especially to education. The use of price indices in comparisons of educational outlays is at a primitive stage as yet.

The collection of *financial data* for educational outlays rests on two series of operations :

i) the identification of budgetary outlays. This is a difficult task[4]. Outlays of individuals and other non-public bodies are most difficult to identify (not to mention so-called income-foregone data) ;

ii) these data have to be used to calculate unit-costs. This is when the inadequacies of a financial data compound the inadequacies of the educational data, for the usual method is to apply unit cost to a given pupil-teacher ratio.

In some estimates[5] unit costs are adopted from one country and used in another. This is, of course, inappropriate to any realistic assessment. Estimates of teachers' salaries are (for example) difficult to make. They have to be adjusted for age and qualification. Building costs are subject to difficulties of standardisation. In identifying needs, two basic tasks have to be undertaken :

assuming that education has to be given to an age-group (say 6 to 12), the size of the age-group has to be estimated. In the state of statistical knowledge of many countries this is not an easy task ;

the adequacy of the existing education system has to be decided. What changes need to be made ? How big a building lack is there ? How much should the teacher-pupil ratio be improved ?

Data Coverage

It will be clear that the whole problem of data coverage is fundamental to the accuracy of current estimates.

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[1] *Forecasting Educational Needs for Economic and Social Development*, OECD, 1962.

[2] Harbison & Myers, *op. cit.*

[3] OEEC : *A Standardised System of National Accounts*, 1958.

[4] John Vaizey : *The Costs of Education*, 1958.

[5] e.g. *The Addis Ababa Report*, UNESCO, 1962.

Forecasts

The data for forecasts are derived from current data. Therefore the forecasts cannot be better than the present data. This simple truth is frequently ignored.

The projections are :

a) demographic,
b) rate of growth of GNP,
c) breakdown of GNP into sectors,
d) a manpower/skill breakdown of each sector,
e) the rate of growth of the demand from education based on enrolment projections.

In addition, the size of the effort needed to make up existing deficiences must be assessed.

The costing of this projection will rest upon existing unit costs allowing for :

i) the possibility of reducing unit costs (e.g. by new techniques of building) ;
ii) the extent to which prices of educational goods and services will diverge from the movement of prices in general.

In the next section an attempt will be made to analyse the problems that arise from these data.

The Analysis

In the preceding pages comments have been made on the validity of the data for current outlays, and it will be clear that the degree of precision of the data does not allow nice calculations to be made. The margins of error are wide. The projections are subject to even greater margins of error.

To take an example, in 1960 Portugal spent 2.2 per cent of its GNP on education. Spain spent 1.8 per cent of its GNP on education in 1962. The margins of error are such that it is doubtful whether the differences are at all significant.

Nevertheless, wherever comments are made on the degree of precision of the data, the broad outlines are clear. In the first place, high rates of growth of GNP are projected and, in the second place, the proportion of GNP that these figures suggest should be devoted to education will increase substantially — towards the proportions now seen in Western Europe and North America. Thirdly, this will represent up to two-fifths of the public outlay for a number of countries on the assumptions made earlier.

We have a number of questions to pose :

i) *What other sectors may be expected to increase as a prerequisite of economic growth?*

One does not have to be a fervant believer in the importance of physical investment for growth to realise that some increase in investment is necessary if the high growth rates predicted in the Mediterranean countries are to be achieved.

As Peacock and Hauser point out[1] the development programmes for Greece and Turkey include substantial tax-incentives for private investment, and postulate substantial direct outlays on public account.

Further, even should the emphasis on economic development planning switch to human resource development, it would require a substantial switch for any significant amount of resources to be diverted from physical investment to human resource development. Nor is education the only part of human resource development which is significant. Housing, health and on-the-job training are all important[2].

ii) *As a consequence of growth, other sectors will grow*

It would be unrealistic to expect the part that human expectations play in growth to be actively denied. Nobody, over a long period, is likely (save in the most exceptional circumstances, such as a Stalinist tyranny) to deny himself all the fruits of growth, so that growth may be still further accelerated. Therefore it is unrealistic to assume that taxation for education can fall wholly on private consumption. Nor, to take a striking example, could other aspects of public outlay — on health or roads, — which are part of the higher standard of living of the community, be permanently held back when education advances.

iii) *Can the public sector increase ?*

Here the difficulties of production are enormous. Historically, though not in any strictly linear pattern, the public sector has tended to grow as a proportion of GNP, as GNP has risen ; but as Peacock and Wiseman point out, there has been a significant effect of wars or threats of wars, and (in the USA) the great slump, in raising the proportion of GNP devoted to public outlays.

It may be that a growth programme is itself a phenomenon with the same effect, though it is as yet too early to say. (The recent UK experience of a growing proportion of GNP devoted to public outlays may indicate something of the sort.) As Horowitz argues, a high proportion of GNP devoted to public outlays may be a cause of growth.

The second point, however, is whether or not the fiscal mechanism itself will improve, so that even though no direct policy decision is taken to raise tax-rates, or impose new levies, the yield of existing taxes is improved. There is clearly great scope for this in some

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[1] *An Agenda for Analysis of Fiscal Systems of Southern European Countries*, OECD (Athens Conference, 12-19 December 1963). Between 1952 and 1960, for instance, investment in Greece rose from 14 per cent to 20 per cent of GNP. See also the argument by D. Horowitz, *Accelerated Growth and the Pattern of Government Expenditure*, OECD, that in a developing nation the public budget will be a major source of investment.

[2] In some countries top priority may well be given to population limitation, for (as Titmuss points out) welfare policies may have an important part to play. The part that education can play in this area has been barely touched on as yet.

European countries[1]. Consequently some of the extra educational outlay will be covered by an improvement in tax-collection. A related, but slightly different, point is that as the balance of the economy shifts from agriculture to industry, yield of taxes rises, since it is more difficult to collect taxes from the rural sector[2]. Again, however, it would be unwise to assume that more than a small percentage of GNP will be diverted in this way.

iv) *Are there special problems of taxation for education?*

Let us take Spain as an example[3]. It will be seen that the great bulk of public outlays falls on central government. Six per cent comes from enterprises for vocational education, 8 per cent from local authorities, and small percentages from diverse sources.

In Yugoslavia, on the other hand, the proportion of funds from local sources is equal to three-quarters of total outlays[4]. Insofar as local resources have been untapped for education, the Yugoslav experience suggests — as has been the case in the US historically — that the common argument for centralisation of education finance may be misplaced[5]. On the other hand, the MRP lays emphasis on bringing backward regions forward, and their tax-resources will be inadequate for this task.

So, also, the Yugoslav experience may suggest (as the US experience does, too) that especially earmarked sources of educational finance present a buoyant source of revenue, despite the general principle that earmarked taxes are to be avoided.

But — and this is the hub of the present argument — the distributional and other arguments in educational finance deserve special consideration.

v) *Costs and Benefits of Education*

It is not necessary to traverse the familiar ground about the place of fees and other charges in education, save in summary form, because the arguments are sufficiently well known. The context of the MRP gives them, however, a new urgency.

Broadly, costs fall into three parts. One part — the direct costs of education — is incurred by the education authority, and recouped by it from taxation or by charges. A second part — the maintenance of the student — is incurred by the family, or the student himself, though it may be partially aided by scholarships, subsidies or tax remissions. The third part — income foregone by the student — is a more notional, psychological, subjective cost, but it has a very real effect in helping to determine people's attitudes to opportunities for education.

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[1] D. Barreva de Irima, *Administrative and Political Problems in Raising Tax Yield*, (OECD).

[2] See I. M. de Navarreto, *Agriculture & Land Taxation*, OECD, esp. para. 22.

[3] MRP Report *Spain, Education and Development.*

[4] MRP Report *Yugoslavia, Education and Development.*

[5] See also the arguments bearing on this in K. S. Krishnaswamy, *The Evolution of Tax Structure in a Development Policy*, OECD.

Now all these costs are linked. As economic growth takes place the costs per unit of education rise, so does the standard of living of the child and the young person, and so does his income foregone. The real burden of education may grow, therefore, at a faster rate than that foreseen in the MRP Report.

The distribution of the part of the burden which represents private costs is likely to fall disproportionately on the lower income groups, especially as a great many of the MRP educational targets imply a narrowing of educational opportunity between social groups. The extent to which this is modified will depend upon :

> the degree of progression of taxes used to finance education, and
>
> the rapidity with which the income increasing consequences of extended educational opportunities are felt by lower-income families. Despite the long-term consequences of education, Seymour Harris' work suggests that there may be some fairly rapid returns.

Now, there is room for argument about the effects on growth of regressive and progressive taxation, but if it can be shown that the returns to education in certain cases are fairly rapid, two arguments are possible :

> a period of heavy taxation to provide funds for education may be justified, despite its immediate effects in depressing growth, if, after a short interval, the outlays on education are likely to speed up growth ;
>
> on the other hand, since the benefits of the education will be rapidly felt by families to whom education is given, the costs of education may be recouped by fees, or direct local taxation, without too much hardship, since the poverty of the present will be quickly followed by education — induced affluence.

The difficulties that arise (dealt with so ably by Professor Prest in his paper in this volume) are :

i) Will the educational opportunities be used if fees are charged and, indeed, will they be used if grants are not made to offset living costs and income-foregone ?

ii) Can the educational facilities be provided at all if only public funds are available for education ?

iii) What types of education give direct short-run benefits ? Clearly, industrial and commercial training must be distinguished from — say — primary education for village girls. Firms and employers will pay for training, which leads directly to greater output, yet girls' education may well change attitudes to growth, and be of tremendous long-run importance.
A system of fees is likely to discourage it. Therefore, a system of fees or charges is likely to bias education to-

wards certain forms of education with apparently immediate returns, when the higher social returns would indicate other priorities.

iv) In a developing country, however, where the returns on education (we have argued) are likely to be high and fairly short-term, the existence of the extended family reduces the significance of the equity argument that fees are borne by one generation, and benefits received by the next. If a family operates as an economic unit over several generations, then its capacity *as a family* to bear costs is directly relevant.

v) Fees as a system of charging seem administratively more practical than a complex system of loans, etc. These general considerations have to be tested in the conditions of the MRP countries. It seems probable that the fiscal burden envisaged is such that methods of finance other than taxation will be found worthy of further investigation.

Part III

SUMMARY REPORTS

SUMMARY REPORTS

19
GENERAL REPORT OF THE DISCUSSION
Alan WILLIAMS
University of York, UK

20
IMPLICATIONS OF THE CONFERENCE FOR FURTHER RESEARCH
Joseph A. PECHMAN
Brookings Institution, Washington DC, USA

21
POLICY IMPLICATIONS OF THE CONFERENCE FOR EIP COUNTRIES
Kjell EIDE
Ministry of Education, Oslo, Norway
and
John EMBLING
Department of Education and Science,
London, UK

LIST OF PARTICIPANTS AT THE CONFERENCE

Chapter 19

GENERAL REPORT OF THE DISCUSSION

by
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It is an invidious task to attempt to summarise twenty hours of wide-ranging and complicated discussion in the short span alloted to me, but I am heartened in my endeavours by the knowledge that obviously it will be impossible to do more than rough justice here to the many ideas put forward during this series of meetings.

We started by considering the economic characteristics of the educational process, and noted that the output from it was made up of three distinct components :

i) current consumption (the pleasure, or perhaps pain, derived from the process of education itself) ;
ii) the formation of a sort of consumer durable good (the enhanced satisfactions enjoyed in later life through having been educated) ;
iii) a productive investment, in the more usual sense of increasing the value of the contribution of labour as a factor of production.

It is undoubtedly possible to arrange the educational process so as to achieve different relative magnitudes in these three components, but nevertheless it is not unrealistic to regard them as joint products of the educational process, each contributing in its own way to raising people's living standards.

On the input side, we noted that the educational process typically has a long gestation period, but that the result, in so far as it is not just current consumption, is the creation of an asset which has an even longer period of useful life.

However, there are various reasons why the pay-off to education may be underestimated : — first because the consumer durable aspect may not be picked up in the conventional measurements of GNP ; and secondly because the productive investment aspect will not bring only the sort of pay-off which is reflected in enhanced earnings for the educated person, but will also generate external benefits to other factors in the economy generally, and these benefits are not easily traceable to the educational inputs which give rise to them. Attempts have indeed been made to measure these external benefits, and although we all have reservations about the validity of some of the methods that have been used, and about the adequacy of the data employed, no one seriously doubts that the payoff to the provision of additional education will be substantial, in both rich and poor countries.

We are concerned here particularly with the payoff that may be expected in terms of faster economic growth, but I noted a marked reluctance by participants to go all out for growth to the exclusion of other social objectives. In particular, the claims of social justice, as regards equality of opportunity and redistributive considerations between rich and poor, were repeatedly brought into the picture. Where the promotion of economic growth requires that new sources of talent be tapped, and existing institutions (both formal and informal) be substantially modified, the claims of social justice and of growth may reinforce each other, and some cases of this kind were noted. But where the measures needed for growth offend egalitarian notions of social justice, as is particularly likely to be the case, for instance, in very poor countries where it may not be possible immediately to extend primary education to the population generally without sacrificing secondary education entirely, then clearly such other social objectives will be inimical to a growth-related educational policy, and it is entirely proper that we face up to this unpleasant fact.

As regards the priorities for such a growth-related policy, there were strong arguments (not universally accepted) that the poorer countries should concentrate their resources more than hitherto upon secondary education, and expand primary education only in so far as it is necessary to complement the efforts made at secondary level. Universities and other institutions of higher learning should be regarded as a wasteful and luxurious use of resources, however glamourous they may be, and efforts made instead to arrange an adequate flow of students to institutions of higher education in the richer countries. Since in the latter such institutions are typically heavily subsidised, education there can be obtained well below its true costs, and even allowing for some wastage in terms of students who fail to return, it is still likely to be substantially cheaper per unit of effective output than attempting to set up comparable domestic institutions. For the richer countries, on the other hand, emphasis was placed about equally upon secondary and tertiary education.

Attempts to develop more precise quantitative guidelines ran into considerable difficulties, mainly because the causal relationships between the variables are in principle open to dispute, the data which has to be used is unreliable, and even when accurate is often ill-adapted to the purposes to which it is put. Consequently the results, even when acceptable as rough estimates, are capable of a wide variety of interpretations. Throughout this conference there has therefore been a constant reiteration of the earlier plea at the Washington Conference that some concerted drive be made to assemble standardised data which could be used to test the many rival hypotheses that occupy the field at present, and about which we can for the time being argue only on *a priori* grounds, or by recourse to very casual empiricism.

We are, therefore, still relying chiefly on commonsensical rule-of-thumb estimates of manpower needs, and the fear was expressed that unless we are enabled soon to move from vague assertions of tendencies to more precise quantitative programming of a kind that will carry conviction, the notion of purposive educational planning for economic development may become discredited. The work of the Mediterranean Regional Project in this field was on several occasions held up as an example of the direction in which we should be moving, even though there was clearly still a long way to go.

Yet in spite of all these deficiencies in our knowledge, no one has challenged the view that in poorer countries the additional resources required for growth-related educational purposes are much greater than the most optimistic forecast of what could reasonably be set aside domestically. This is particularly true during the transition period (which will be at least 10 or 15 years) during which the economy has to be geared to bring its stock of skilled manpower up, say, to a level comparable to that enjoyed at present by the poorer « developed » countries. During this phase a disproportionately large increase in the rate of « throughput » in the educational sector is going to be required, and an even larger proportional increase in the rate of capital formation in education (including here the stock of teachers). Although this problem is most acute in the poorer countries, the same phenomenon is present in the richer ones which are trying to increase the capacity of their educational « industry », but there at least the targets do appear physically capable of attainment, and it is simply a question of whether there is a corresponding willingness to shoulder the necessary costs.

What are the real opportunity costs of increasing educational provision ? If there are idle resources available which can be used in the educational field, then the real opportunity costs will be zero, no matter what the conventional pricing mechanism may indicate to the contrary. It may well be that in some countries there are reserves of under-employed labour and unused physical resources which can be brought together in projects such as self-help school building programmes, and whatever scope exists for such efforts should obviously be exploited. But an educational effort of the magnitude we are envisaging clearly goes far beyond this, and will inevitably entail either the postponement of some current consumption (i.e. the generation of additional real savings), and/or the diversion of resources from other types of investment (be it public or private), and/or persuading some other country to bear the real costs, in the short run at any rate, by giving aid.

In poor countries the scope for depressing real levels of consumption must be low, although even there people may be more willing to make sacrifices for their own or their children's education than they are for other social purposes. Since the payoff to physical capital investment has been disappointingly low in terms of growth, there may be a greater willingness to divert real resources from physical to human investment, within the limits set by the complicated patterns of complementarity which appear to exist in this difficult field. But we are still left with the inescapable conclusion that a large part of the real costs will need to be exported by relying on aid. The question which then arises is whether the domestic payoff will be in such a form as to enable aid in the form of loans to be a prudent proposition, or whether aid in the form of grants will be indispensable. To this point I shall return later.

For the richer countries there is more scope for cutting into existing consumption and investment, but they too have many other pressing social objectives competing for the available resources, so the fact that it may well be feasible for them to carry through their plans unaided, does not mean that they can be carried out painlessly. To take only two practical examples, a greater supply of teachers means that their skills are not available for other purposes, such as nursing or the operation of computers, and the diversion of the construction industry to the creation of new schools and universities implies that fewer resources are available for hospitals or roads or offices or factories. Only if there are unemployed or underutilised resources available will the real opportunity costs be negligible, and in this respect the pressure for wider use of school and university buildings in vacations and attempts to induce older married women to return to teaching are understandable phenomena, as is the use of factories and offices outside working hours for adult education.

All these real considerations have to be translated into financial terms in order to get to grips with actual policy measures, since we in fact allocate the real resources by manipulating the relevent money flows, and this is just as true of most public sector activity as it is of the activity of the private sector.

There was some discussion of the relevant roles of the private and public sectors, i.e. how far the market mechanism can be used to promote the growth-generating objectives of educational provision. The general conclusion appears to be that in spite of its admitted advantages as a decentralised, flexible and sensitive mechanism for allocating resources, the market is likely to prove inadequate to the immediate task as outlined earlier because, in the first place, considerable intervention by way of taxes and subsidies would be required to ensure that decisions are taken with proper regard to externalities, and secondly because the existing distribution of money « votes » may not be acceptable as a way of rationing education, and finally because the motivation of particular consumers (or their parents) may be grossly at variance with the generally accepted values of the society in which they live. Most participants have therefore been willing to accord only a minor role to the private market mechanism as a means of allocating educational resources, and particularly so in the poorer countries where financial institutions and markets are poorly developed and function imperfectly.

But where the market mechanism can be harnessed to fulfil the objectives set for the economy via the political process, there has been no evidence of reluctance to use it, and in this field particular interest has been shown in the possibility of increasing the role of private industry in the educational field. This participation might be in the form of direct contributions (perhaps even in kind) to the provision of formal technical education, or, with some encouragement by way of tax relief perhaps, in great provision of on-the-job training, or by way of release of employees for part-time training while still on the payroll, and so on. There have also been suggestions for the encouragement of private subscription to educational loan funds, organised as a mixture of insurance and instalment buying, with the pooling of risks, and repayments geared to the subsequent earnings of borrowers. We have also heard repeated entreaties for the establishment of what might be called Selma Mushkin Institutes for Later Education (SMILES) which would finance the exercise of a sort of deferred option on further education to be taken up some time after leaving school, and be financed both by the prospective beneficiaries and by industry (and perhaps too by the state). But valuable though such schemes would undoubtedly be, their contribution to the total resources available for education is not likely to be so large that it will reduce substantially the magnitude of the effort required by the public sector.

Most of our attention has therefore been directed to public sector activities, and we have attempted to elucidate the repercussions of various financial measures as they will operate through the price mechanism upon real resource allocation. Moreover, the following discussion is to be seen against the background of ambitious plans for educational expansion which, in both rich and poor countries, are going to require for the implementation either a substantial shift of resources towards education within the public sector, or a significant increase in the share of national resources at the disposal of the public sector generally, if not both.

First of all, as regards the choice between private and public *provision* of education, as distinct from public *support* for education. — When a truce was called on this issue my impression was that a concensus of opinion had emerged where most people were willing to accept the present conditions of varying mixtures of public and private provisions at different levels and in different countries, unless some strong case for change could be made out. For while everyone acknowledged the need for experimentation and innovation, no one was prepared to advocate radical changes in existing arrangements, at least in the present state of our knowledge.

Secondly, the two forms of domestic financial support that excited most discussions were loans and grants. Here the overall volume of such transactions reflects only imperfectly the extent to which real resources are being transferred, for we need also to know the extent to which differences in methods of finance reflect a different selection of beneficiaries and/or of types of benefits, and/or a different allocation of real opportunity costs, between people or between broad economic categories such as consumption and investment.

With these considerations in mind, it was argued that loans were more likely to be forthcoming than grants, and therefore could

381

constitute, in part at least, a net addition to the resources available to education. They also enable the costs to be borne more specifically by the beneficiaries (if we are concerned mainly with the private benefits), and, as a further refinement, repayments may also be linked with tax concessions for amortisation of the debt. As repayments are made, they accrue to a fund earmarked in advance for further educational loans, whereas the recoupment of grants through general taxes merely channels funds into the general budget of the government. The chief disadvantages of loans appear to be their possible disincentive effects upon certain groups (especially girls, and the children of poorer families), although this is much less marked with some loan schemes than with others.

In the grant field many different categories can be distinguished, but I shall confine myself to three : grants made directly to educational institutions ; grants made to individuals ; and grants from national to local governments (including federal-state and state-local).

Grants made to educational institutions constitute a strong potential source of control by the grant-givers over the behaviour of the grant-receivers, and in this latent power lie both the advantages and disadvantages of this device. This is familiar ground and the arguments need not be repeated here. Such subsidies have also been criticised on the grounds that they help both rich and poor students indiscriminately and that more good would be done, with the same expenditure of funds, by raising tuition fees and helping students selectively by direct aid to them as individuals.

This brings me to the second category of grants, which have been further advocated because they may be used to make pupils independent of their parents (an advantage they enjoy particularly over tax reliefs). If generous enough, they reduce the risks of wastage through dropouts, but some fears were expressed that they also tend to reduce students' incentives to exploit their educational opportunities to the full, though this would be a difficult matter to prove or disprove empirically. Finally, if grants are given as a right to all students securing admission, this may well imply a redistribution of resources from the uneducated to the educated, which presumably also implies from the poor to the rich, and this possibility has also to be weighed in the balance.

The final grant category to be considered here is grants to local governments. These are especially likely to be important where the national government has the main engines of revenue, yet where decentralisation within the public sector is regarded as desirable. This aid can take many forms, and can be designed so as to be stimulative or restrictive, so as to leave existing differentials largely unaffected or so as to introduce greater uniformity, so as to give selective support for particularly desirable objects or so as to provide general support, and so on. Indeed, there is almost no end to the variations that can be played on these themes but there is no space to consider them further here.

Leaving aside loans and grants, we can turn thirdly to expenditures designed to improve the productivity of the educational system itself. This may work within existing teaching techniques to reduce the costs of buildings, to improve costing procedures generally, etc., but this again depends for its effectiveness upon a great deal of ground-work in digging out the relevant raw statistical data, and brings us back once more to that thorny problem. But there is also the possibility of research into improving the economic efficiency of the teaching techniques themselves, which means experimenting with new methods designed to substitute cheaper inputs for more expensive ones. This is a difficult and sensitive field, in which definition of the quality of output plays a tricky role, not to mention the entrenched interests of the owners of the present inputs !

The fourth item of expenditure is expenditure on aid, which in the richer countries should be recognised explicitly as a claim upon their educational resources, and taken into account when planning educational output. Where the transfer of specific education inputs (such as teachers) is required, it is not helpful to show this separately in another part of the budget along with general aid programmes.

But the various problems that we confront on the expenditure side are child's play compared with the intractable problems that arise on the revenue-raising side. Foremost is the problem of limited fiscal capacity, which is not peculiar to educational finance as such, but is a general public finance problem in many countries. This problem has two inter-related aspects — the present size of the tax base, and the elasticity of tax revenues as economic growth proceeds. If it is feasible to have a tax structure which is such that tax revenues rise more than proportionately to the growth of GNP, there will be greater scope for securing additional resources for education, (and for other public services) than there would be in a system where increased educational provision is conditional upon the levying of « new » taxes, (including raising the rates of existing taxes), and this will be especially true where the levying of new taxes absorbs scarce administrative talents, perhaps prohibitively so.

In general, economists do not look favourably upon the earmarking of particular revenue-sources for particular public services, unless such revenue-sources are closely related to the benefits received from the associated public services, and no redistributive effects are desired, and possible disincentive effects upon the use of the service in question are of no consequence. But if a tax were acceptable to the public if earmarked for education, when it would not be acceptable otherwise, then there may be a case for earmarking. Fees for education would have to be considered here as a benefit-related tax if they were charged for that part of education which is compulsory. But widespread benefit-related taxation for the finance of education runs into the many difficulties alluded to earlier, and of particular importance is the fact that the wide dispersion of the benefits from education throughout the economy means that it may not be possible to « attach » taxes to the incremental money flows that are in fact generated by additional educational provision, and even greater difficulties arise in taxing the « consumer durable » aspect of education which may give rise to no actual money flows at all.

If tax revenues are insufficient, there is still borrowing. There are no special objections to borrowing as a means of financing educational expenditures, since they can be expected to raise GNP significantly in the future and therefore constitute a potentially productive real investment. But the choice between taxing and borrowing will have to be guided by general economic policy considerations regarding the relative effects of the two measures upon the level and composition of output and of the demand for output in the economy generally. Obviously, if it is possible to divert resources to education from less valuable uses by means of government borrowing, this will be an unobjectionable procedure. We shall still be left, in the future, with the fiscal problem of servicing the debt, but as the economy grows richer this should become easier, and the « buying of time » by relieving the immediate load on the tax structure may well prove worth while. Reliance on borrowing does nothing, of course, to alter the fact that it is current real resources that have to be transferred from other uses to education, it is simply that the financial mechanism by which this transfer is effected is different in the case of borrowing than it is in the case of taxing, with possible consequential differences in real incidence, etc. But the price to be paid for too great a reliance on borrowing will be the creation of inflationary pressures, which may or may not be conducive to the desired transfer of resources to education, the outcome being dependent upon relative price-cost movements.

Borrowing from abroad is yet another possibility, which has already been mentioned earlier in connection with foreign aid. Again, it will be a suitable means of obtaining the immediately required real resources provided that the servicing obligations acquired with it do not exceed the capacity of the economy to generate domestic fiscal capacity on the one hand, and, on the other, to create real resources which can be transferred to the lending country. Unfortunately, because of the long gestation period involved, and the diffusion of the ultimate benefit, there will be severe limitations upon the extent to which foreign loans could prudently be accepted, unless their terms are tailored to the peculiarities of educational investment. Residual aid needs would then have to be met in the form of grants, and for certain very specialised educational inputs the supply of which cannot readily be increased in the short run, this aid might even need to be given « in kind », e.g. in the form of teachers, though general aid will also be required to facilitate the general reallocation of resources within the economy.

In this brief survey of the very extensive territory covered during our discussions, I have attempted to maintain a judicious detachment and to resist the temptation to leap into the fray, but I have no illusions that I shall have succeeded in this endeavour to the satisfaction of every participant. You will have noticed that at times I skated quickly over some rather thin ice, and in this I plead the indulgence of the immediate participants in this conference, for in preparing this report I have tried to look beyond them to those who will be reading the conference papers subsequently, and for whom a lengthy account of every controversial point would be both tedious and unhelpful. Instead I have tried to set our discussions in a broad frame of reference which brings out the relationship between the financial measures, which have been our immediate concern, and the basic economic problems to which they are directed. For if this connection is not kept continually in mind, there is a great danger that the financing of education for economic growth will come to be seen solely as a problem of raising money, to the neglect of the real resource allocation problem which is our ultimate and fundamental concern.

Chapter 20

IMPLICATIONS OF THE CONFERENCE FOR FURTHER RESEARCH

by

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It is now universally recognised that there is a significant relationship between the economic growth potential of a nation and the skills, dexterity, and mobility of its workers. The latter depend, in turn, on the educational attainment of the labour force. This economic justification is perhaps less important than the social and ethical arguments for education and its value as a pure consumption good. Nevertheless, great emphasis has been placed in recent years on the economic benefit of education, and most nations of the world seem to be embarked on programmes to expand and improve their educational systems.

As the discussion at the meeting indicated, the major burden of financing education in developed as well as underdeveloped countries must rest on the government. Given the numerous demands for other necessary public services, the imposition of the burden of financing an expanded education programme inevitably places great strains on government finance. There is an awareness of the financial problem on the part of governments everywhere, but the meeting revealed that there exists a surprising lack of knowledge about some of the fundamental questions relating to the nature of this problem and alternative methods of coping with it. The data and research needs are substantial and warrant immediate attention by international and government agencies, the universities and private research organisations.

The research agenda suggested by the discussion at the meeting may be summarized under five major (but not mutually exclusive) headings[1] :

I. General data problems ;
II. Determinants of educational expenditures ;
III. Methods of financing ;

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[1] For an excellent discussion of research needs in financing education, see Selma Mushkin, « Research Studies on State Financing of Education », *Proceedings of the Fifty-Sixth Annual Conference on Taxation,* held under the auspices of the National Tax Association, November 11-15th, 1963. (Harrisburg, Pennsylvania, 1964).

IV. Methods of improving budgetary control ;
V. The special problems of the developing countries.

I. General Data Problems

Because interest in educational policy as an economic problem is of recent origin, there has not been sufficient time to develop an integrated and consistent set of statistics to provide the basis for the research and analysis needed in this field. At many points during the meeting, authors and participants lamented the fact that the necessary data did not exist or that the available data were of limited usefulness. Population statistics in many countries are grossly inadequate ; enrolment figures are deficient, particularly for private and non-formal education ; and financial data are usually rudimentary and rarely informative. In the circumstances, the first order of business should be the development of a standard framework for all countries for statistical reporting on education.

The data most urgently needed are as follows :

1. *A uniform and accurate set of population statistics.* The usual details by age, sex, occupation, industry, income, geographic location and educational attainment are needed. Such information should be collected frequently to avoid the costly mistakes that can occur in planning as a result of the use of out-of-date statistics.
2. *Information on personnel involved in the educational system,* including enrolment by grades, number of teachers, administrative personnel and other employees. It is particularly important to have information on education conducted outside the state school system, both in private schools and in industry. Statistics on vocational education, adult training courses, industrial apprenticeship programmes, and other similar activities are not available even for the most advanced industrial countries. The gaps in our knowledge about these programmes are becoming more and more evident as increasing emphasis is placed on non-formal education to alleviate unemployment and poverty, and to provide the particular skills needed in rapidly growing economies.
3. *Reports on the sources and uses of the funds devoted to education.* Such financial data are absolutely essential for the management of the education system and for budgetary control. These data should be prepared in a form that will be suitable for the institutional setting in the country concerned and also conform with the requirements of national income accounting. Experience in other fields suggests that the effort to provide data for the national income accounts enforces consistency and results in much more useful information for economic analysis.

In view of the great variety of information needed, a group of experts should be commissioned by the main international organisations to set up the standard statistical framework. Such an approach provided a major stimulus for the development of national income accounting[1], and would doubtless be equally effective in education. After the development of the standard framework, one of the international organisations should undertake to publish and disseminate the statistical data. Technical assistance should also be provided for those countries needing help to collect and process the information called for by the standard framework. It was announced at the meeting that the OECD Secretariat is currently undertaking a study which should lead to the establishment of such a standard framework, at least for the relatively advanced OECD countries.

II. DETERMINANTS OF EDUCATIONAL EXPENDITURES

Education expenditures are only partly determined by the age distribution of the population. They depend heavily on the level of compulsory education, the relative emphasis on secondary and higher education, the degree of public support for educational activities outside the school system and other basic policy decisions. Very little systematic research and thinking has been done on these issues.

It is clear, for example, that the cost of immediately providing adequate educational opportunities is prohibitive. Instead, countries usually proceed by gradually raising the required number of years of schooling. Although raising the compulsory level of education is an important instrument for moderating income inequalities, policy-makers have few guidelines for determining how far and how fast compulsory education should be extended.

Similarly, we are beginning to understand the significance of vocational and adult education outside the schools, but we know very little about these forms of education even in developed countries. Suggestions have been made for governmental subsidies to business firms, through tax incentives and other measures, to promote additional education and training of adults. Research to develop such techniques is clearly in order, but before permitting such research to go forward we should have a much clearer notion of what is meant by the term « education », and also much more information on the relative values of the various types of training included in this definition.

Implicit in the discussion at the meeting was a fairly general agreement that education has a high economic « pay-off ». But the available estimates are rudimentary and apply only to a few countries. We suspect that education, like other industries, is subject to decreasing returns, but we do not know when returns start falling rapidly. Nor do we know very much about the returns to different forms of education, the economies (and diseconomies) of scale, the effectiveness of the new educational methods, the external benefits of education, and the spillover effects[1]. Further research into all of these areas is needed to improve efficiency in the use of funds devoted to education.

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[1] Significant examples of attempts to establish data on national accounts which were internationally comparable were those contained in the reports published by the Organisation for European Economic Co-operation and the United Nations. See, e.g., *A Standardised System of National Accounts*, OEEC, Paris, 1958, and *A System of National Accounts and Supporting Tables*, UN, New York, 1960.

While we must push ahead as rapidly as possible on these difficult conceptual fronts, educational decisions cannot be deferred until all the answers are in. Inevitably, the policy-maker will wish to have at his immediate disposal some projections of the manpower and educational resources needed for long-term economic and social development. Research on methodology, as well as actual preparation of the projections would be fruitful for both developed and underdeveloped countries.

The Mediterranean Regional Project (MRP), which is described in this volume, is an excellent example of the manpower approach. It is an attempt by six OECD countries in the Mediterranean region (Greece, Italy, Portugal, Spain, Turkey, and Yugoslavia) to estimate the investments in education required to achieve specified growth objectives. GNP projections have been prepared for the target year 1975 for the minimum growth rates considered necessary by each country. These estimates are then used as a basis for calculating total output in the target year, which is then used to estimate manpower requirements by level and type of education. The manpower estimates are translated into enrolments, teachers, classrooms, equipment, and other inputs needed to provide the skills estimated to be required in the target year[2].

The statistical analysis prepared by the Netherlands Economic Institute of the relationship between the number of persons with secondary and higher education and real national income in 23 countries is also relevant in this connection. A major criticism of these estimates is that cross-section data for countries in different stages of development are hardly likely to produce valid estimates of demand for education over time for any one individual country. A more fruitful but essentially similar econometric approach would be to isolate the factors explaining the demand for education in particular countries on the basis of time series. Comparisons of such estimates for various countries might well disclose certain common characteristics that would be helpful in educational planning.

III. METHODS OF FINANCING

The strain placed on government revenues by the burden of financing education even in situations of substantial economic growth is fully documented in the papers prepared for this meeting. The essence of the problem is that almost everywhere education expenditures have increased relative to the gross national product, while few revenue systems have a yield which is much more than the constant proportion of the national product. The participants agreed that there is a need to develop information on :

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[1] It should be emphasised that rate-of-return calculations and cost-benefit analyses should include qualitative analyses of the non-measurable costs and benefits and their possible effects on the results in order to prevent misuse of the data by those who may not be fully aware of the pitfalls in interpreting such estimates.

[2] In its second stage, the MRP will investigate the geographic breakdown of the national educational programmes developed through the first stage : the importance of vocational training inside and outside the formal educational system, and, in great detail, the cost and financing of education.

1. the responses of governmental revenues to changes in income (i.e., automatic or built-in flexibility) ;
2. sources of educational finance other than taxes ;
3. methods of inter-governmental co-operation.

1. *Built-in flexibility*

The responsiveness of the tax system to changes in income is measured in one of two ways : as built-in flexibility or as elasticity. The former measures the marginal change in tax collections accompanying a marginal change in income : the latter measures the percentage change in tax collections for each percentage change in income. One measure may be derived from the other[1].

These measures can easily be calculated from time series provided there are no changes in tax rates. In practice, however, tax rate changes occur frequently in almost every country, so that without adjustment the available data are not suitable for such time series analysis. The Ministry of Finance should routinely provide estimates of the effect on revenues of changes in tax laws[2]. More often than not, such estimates are prepared for internal use, but are rarely made available to others.

Aside from time series analysis, new techniques are now being developed to estimate income tax yields with the use of high-speed electronic computers. Essentially, the method is to obtain a small stratified sample of tax returns, and to compute the tax on each return on the basis of alternative income assumptions. The computed taxes are then weighted to give estimates for the entire population. This method is now being used on an experimental basis in the United States and is well within the capability of other countries with electronic computers[3].

2. *Non-tax sources of education finance*

General tax revenues are — and will undoubtedly remain — the major source of educational finance. Nevertheless, many participants at the meeting felt that the development of non-tax sources might significantly alleviate the burden of financing, particularly for higher education. The most prominent of these possibilities was to charge tuition and maintenance fees and provide loans to students to pay these charges. Before this approach will be practical, considerable research needs to be done to develop criteria for determining the appropriate size of loans and terms of repayment.

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[1] If b = built-in flexibility, e = elasticity, T = tax in base year, and Y = income in base year ;
Then, $b = \frac{dT}{dY}$ and $e = \frac{dT}{dY} \div \frac{T}{Y}$, or $e = b \div \frac{T}{Y}$.

[2] For an excellent example of what can be done, see the detailed estimates of all tax rate and structural changes made in Japan since the end of World War II, by T. Watanabe, *National Planning and Economic Growth in Japan, Quantitative Planning of Economic Policy* (The Brookings Institution, 1965).

[3] For a detailed description of the methodology, see my paper, *The Use of Electronic Computers for Revenue Estimating*, prepared for the OECD Conference on Government Finance and Economic Development, held in Athens, December, 1963.

Interest was also expressed in the possibility of deriving supplementary financing for education from industrial sources, on the grounds that industrial requirements for skilled manpower are met to such a large extent by public educational institutions. One plan, suggested by Dr. Selma Mushkin, is to levy a charge on industrial firms, with a rebate to the extent that they contribute to the development of new skills among their employees through their own educational or training programmes. This suggests that the entire role of industry in education — both as producer and consumer of the educational product — needs to be explored and related to educational policy and finance.

3. *Intergovernmental relations*

The significance of intergovernmental relations for education depends on the degree of centralisation of the responsibility for educational finance. There is obviously no problem if the central government pays the entire bill. In many countries, however, local governments have both financial and operational responsibilities. In such cases, the adequacy of local sources of revenues becomes a crucial determinant of the level and quality of education.

Although conditions vary throughout the world, it is almost universally true that central governments pre-empt for themselves the most productive tax sources. Local governments tend to rely primarily on property taxes which are difficult to administer equitably and do not respond promptly to changes in prices and income. Various forms of assistance from the central government to local governments have been developed, with varying degrees of success. These include specific grants-in-aid, unrestricted grants, shared taxes, tax credits, and tax supplements. The experience of these methods of intergovernmental co-operation has been analysed sporadically in various publications, particularly of the Anglo-Saxon countries[1]. A systematic analysis of experience elsewhere would provide a much better basis than we now have for evaluating the effectiveness of the various known devices for alleviating the financial burden of local governments.

IV. METHODS OF BUDGETARY CONTROL

Now that education has become so important in most countries, there is a growing awareness that strict budgetary controls are needed to insure the most effective use of the funds. The uniform system of budgetary accounts suggested earlier for purposes of research is even more urgently needed for purposes of administration. Technical budget and accounting officers with professional training in accounting and cost analysis are needed to prepare financial and cost studies, and these could be usefully supplemented by the expertise of economists and operations research analysts.

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[1] See, for example, US Advisory Commission on Intergovernmental Relations, *Tax Overlapping in the United States*, 1964 (US Government Printing Office, 1964); Eric J. Hanson, *Australian Commonwealth Grants Commission*, Canadian Tax Paper No. 20 (Canadian Tax Foundation, 1960); and K. Grant Crawford, *Provincial School Grants, 1941 to 1961*, Canadian Tax Paper No. 26 (Canadian Tax Foundation, 1962).

Modern budgeting has emphasised the need for planning and controlling expenditures on the basis of activities or the programmes to be performed, rather than on the basis of objects of expenditure which are generally high-lighted in traditional budgets. Two new, and related, types of budgetary systems have been developed in recent years to assist in administration and management « performance » and « programme » budgeting. Performance budgeting serves the purposes of managing the detailed functions of operating agencies. Programme budgeting is oriented toward providing the information for overall budgetary planning. These new forms of budgeting were applied successfully to national defense after a great deal of research had been done to prepare new budgetary classifications and to develop new methods of cost control[1]. Similar research is urgently needed to reform the archaic methods of budgetary administration in education.

The very nature of programme budgeting is to look beyond the confines of the budget year immediately ahead, and this requires long-term projections. The difficulty is that government officials feel that the availability of long-term projections will reduce their flexibility and give political opponents too good an opportunity to criticize. Although these are real practical problems, there are compensating advantages in improved performance and effective administration. As techniques for making long-term projections improve, there is every likelihood that government officials and the public will come to accept them as a routine aspect of budgetary planning.

A necessary ingredient of an effective system of budgetary control is a very detailed knowledge of the costs of operations. More often than not, budget analysis and planning is confined to financial planning and disregards the real costs that lie behind the financial figures. In education, where costs are incurred by private individuals and businesses as well as by government, it is essential to have estimates of real costs as well as financial costs, and to avoid losing sight of private costs. Studies are urgently needed to develop appropriate methodologies for the preparation of adequate and usable estimates of real costs for guidance of educational policy.

V. SPECIAL PROBLEMS OF DEVELOPING COUNTRIES

Several papers in this volume emphasize the need for speeding up the improvement of education in developing countries. There are differences of opinion, however, about how this investment should be allocated among the different levels and types of education. Should an under-developed country invest primarily in the elimination of illiteracy among adults, or should it concentrate on grade-school education for the children ? Is it efficient to develop a system of higher education in these countries ? What role should vocational education play ? Studies of the rates of return for the various years of schooling in different countries would help to resolve many of these very difficult, but pressing, problems.

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[1] See Charles Hitch and Roland McKean, *Economics of Defense in A Nuclear Age*, Harvard University Press, 1960.

Research on inter-regional flows of benefits and costs of education would also be relevant in this connection. Most countries cannot afford a major institution of higher learning, and therefore send their best students abroad. Some of these students do not return to their homes after their education has been completed. How significant is this factor in depleting the talents of under-developed countries ?[1] Should the externalities and geographic spillovers be taken into account in the development of foreign aid policies ? Can incentives be developed to reduce or eliminate the attrition without impairing the individual's freedom of choice ?

The basic problem for under-developed countries is to obtain the financing which is so essential if they are to make substantial progress in education. For reasons mentioned in a number of the papers, external assistance is amply justified, but, as Richard Goode pointed out, it is easier to justify a loan for investments such as bridges, roads, and electric utilities, which can be financed by user charges, than for intangible investments such as education. Perhaps this reluctance can be overcome by the studies of rates of return in education and the geographic spillovers to which reference has already been made. It is also important to begin developing more definite criteria for justifying loans to finance educational investments.

Finally, as previously indicated, a large part of the problem of financing education arises because internal financing is inadequate. To keep pace with the growing needs, domestic sources of finance should increase more rapidly than the growth in output. This requires the use of income and sales taxes which are difficult to administer in under-developed countries. Additional research on methods of improving financial administration would be useful[2], but there is even more urgent need for technical assistance to help under-developed countries to put into practice the results of the research already completed.

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[1] There is, of course, considerable movement of labour among developed countries as well. An interesting study along these lines would be to quantify the benefits (and costs) of the large international movements of workers and professional people that have taken place in recent years.

[2] See *Reforma Tributaria Para America Latina*, Volumes I and II, for reports on conferences held in Buenos Aires in 1961 and Santiago in 1962 on problems of fical policy and tax administration in under-developed countries (Pan American Union, 1963). An English version of these volumes will soon be published by the Johns Hopkins University Press.

Chapter 21

POLICY IMPLICATIONS OF THE CONFERENCE FOR EIP COUNTRIES[1]

REPORT ON THE STUDY GROUP IN THE ECONOMICS OF EDUCATION MEETING ON THE FINANCING OF EDUCATION FOR ECONOMIC GROWTH WITH PARTICULAR REFERENCE TO POLICY IMPLICATIONS IN THE EIP[2] COUNTRIES

by
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The Study Group in the Economics of Education at its last meeting examined the topic : Financing of Education for Economic Growth. The group of participants included leading officials of education authorities of EIP countries as well as outstanding experts in public finance, economics of education and educational finance, from both European and North American Member countries. The papers presented and the discussions held during the four day meeting revealed several important implications for government policies with respect to educational development (not only for educational policy as such, but also for budget and tax policies).

The policy issues emerging from the discussions, which appear to be particularly relevant to EIP countries, are related to the following basic features of the situation in these countries :

> The development of educational systems — as measured by data on educational stocks and flows — is accompanied by a

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1. 2. OECD's Educational Investment and Planning Programme (EIP) affects the following Member countries : Austria, Belgium, Canada, Denmark, France, Germany, Iceland, Ireland, Japan, Luxembourg, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States. This report was originally presented to the sixth meeting of the national EIP representatives who recommended that it be brought to the attention of the OECD Commitee for Scientific and Technical Personnel.

394

complementary monetary flow for it is through the manipulation of money flows that the allocation of real resources is determined.

The extent of the financial resources available to the country, the success of those responsible for providing education in pressing their claim for an adequate share of those resources, and the allocation of the resources within the educational system all play a part in limiting and directing the short-term and long-term development of education.

In introducing and developing educational planning, the EIP countries are making a determined effort to promote rational decision-making based on the long-term socio-economic objectives of educational policy including its function as the main contributor to the value of human capital.

The balanced allocation of resources within the framework of educational policy, and between education and other fields of government policy, in order to serve effectively such socio-economic objectives is primarily achieved through the mechanisms particular to each country for the allocation of financial resources.

In the EIP countries the arrangements for allocating such financial resources are based mainly on administrative traditions dating back to a time when government responsibilities were different and far more limited in scope than they are generally accepted to be in a modern society. The instruments at present available for financial policies therefore tend to be too rigid for flexible adaptation to new needs and priorities, thereby reducing the possibilities for achieving a properly balanced resource allocation both between main sectors of policy and within the individual sectors. This seems to be particularly true for the educational sector — where present developments appear very dynamic.

Thus an important conclusion emerging from the Study Group's discussions on educational finance is that governments in general and educational authorities in particular should devote considerable attention to possible ways of avoiding a situation in which agreed policies cannot be put into practice because of technical deficiencies in the system of educational finance.

The following general observations were made concerning EIP countries as a result of the Study Group meeting :

The existence of ambitious plans for the expansion of the educational system, which would raise the proportion of GNP spent on education from the present level of about 5 per cent (somewhat depending upon methods of calculation) to at least 7-8 per cent in 10 to 15 years ;

Financial forecasts based on existing systems of taxation indicated approximately the same rate of increase in government revenue as in GNP ;

Views were rather pessimistic as to the possibilities of increasing the private sector's share in the financing of education, the trend apparently pointing towards an increase in the public share.

There was a definite feeling among the participants of the meeting that, although at least in some countries there might be scope for increasing the share of governmental financial resources going to education, an increase in this share at the expense of other government activities — large enough to match existing plans for educational expansion — seems most unlikely.

Assuming there is a proper balance between educational and other activities of public concern, national and educational authorities seem faced with the choice of :

a) finding ways of increasing the governments' share of total resources, in accordance with the widely held view that Western countries tend to be out of balance as regards public services versus goods and services produced in the private sector ;

b) finding new sources of public revenue directly associated with education and earmarked for educational purposes, thus avoiding at least some of the psychological obstacles to general tax increases ;

c) finding ways of achieving educational goals with the smaller use of resources, through increased productivity in the whole educational sector. This should include the removal of obstacles to the optimum use of educational resources due to deficient systems of finance.

The general feeling of the Finance meeting was that no single one of the lines of action indicated above would be sufficient to secure the financial means for implementing existing plans for educational expansion. Consequently, an examination of the possibilities of their joint application is needed, and should be undertaken by governments in all EIP countries.

a) INCREASING GOVERNMENTS' SHARE OF TOTAL RESOURCES

This question lies mainly beyond the formal competence of educational authorities, except for their proper share of influence on national policies. It is, however, the responsibility of educational authorities to make clear beyond any doubt the consequences for educational policy of a failure effectively to solve this question. Information emerging from long-term educational planning is indispensable for this purpose.

b) NEW SOURCES OF FINANCIAL MEANS EARMARKED FOR EDUCATIONAL PURPOSES

Various possible sources of this kind were discussed during the meeting : increased tuition fees, special taxes on industry for the financing of vocational training or the increased direct participation of industry in such training, the loan financing of educational building and of students' maintenance costs (instead of direct grants).

The detailed examination of such possibilities will have to be a joint responsibility of financial and educational authorities. In each case the gain in terms of more funds for education will have to be weighed against possible unwanted side-effects upon educational policy. Doubts were expressed at the Study Group meetings concerning the likelihood of decisive increases in the contributions to educational finance from such sources ; on the other hand, the rising private demand for secondary and higher education gave reason to think there were some untapped sources of this kind.

c) OPTIMUM UTILIZATION OF FINANCIAL RESOURCES FOR EDUCATION

While the main responsibility for a careful examination of this question must rest with educational authorities, certain aspects can be solved only within the framework of general financial policy. It follows that, since educational expenditures constitute a substantial part of public spending, educational policy is greatly affected by the excessive use of government budgets as a tool for financial policy in the absence of other adequate policy instruments in this field.

Public expenditures on education are in fact to a great extent used as a tool for purposes of monetary policy, anti-inflation measures, etc. This especially affects educational building, since reductions in public capital investment are most frequently used to counteract economic short-run fluctuations and educational building constitutes up to three quarters of total public investment in certain countries. For the long-term development of education, with its basic importance to general social and economic development and its long gestation period, this domination by short-term objectives of financial policy is detrimental.

The solution to this problem lies partly in the development of a more comprehensive set of instruments for financial policy, leaving government budgets and public investments as one among many financial tools for a policy of balanced growth. Furthermore, to the extent that purely financial measures must affect educational expenditures, educational authorities should be prepared to suggest a highly selective policy of reduction or postponement of such expenditures, aiming at the minimum damage to educational objectives. The working out of a « least damage » reduction plan for educational expenditures[1] kept in reserve in case of economic fluctuations and calling for closer collaboration between educational, financial and manpower authorities, has been tried with success in some EIP countries. Once again, the existence of detailed educational long-term plans is a precondition for an adequate solution to the problem.

Similar rigidities in financial policy are frequently the cause of sub-optimum allocation of financial resources between current and capital budgets for education, and between the educational budgets of central and local governments. This lack of flexibility is also due to a lack of adequate instruments for a selective financial policy.

It is in the interests of education authorities to find out why and to what extent money flows and the mechanisms attached to them are limiting factors in educational development, how and to what extent they can be overcome and how and to what extent such flows and mechanisms can be used to assist educational development. Because of the total contribution of the educational process to the production of human capital these matters should also be of major concern to national governments.

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[1] And also a reserve plan for additional expenditure.

Ineffective use of educational resources cannot, however, be blamed only on deficiencies in the general systems of government finance. There are numerous examples of systems of financing educational institutions, or methods of transfer of financial means to local government or to the private sector, which do not encourage the economic use of the means put at their disposal. A thorough analysis of the effectiveness of existing methods in this field, in most cases established and applied by educational authorities themselves, is needed in order to secure optimum use of educational funds.

Within the educational system there is much more scope for the efficient use of the funds available ; the greater the need to persuade governments to increase the funds available to education, the greater the need to demonstrate the efficiency with which the existing resources are being used. To this end, and indeed to get maximum value for money spent, all modern techniques of operational research and cost analysis should be used to scrutinize the administration of the educational system.

Furthermore, while educational objectives change with time, practices of educational institutions tend to lag behind, serving obsolescent goals. Much more emphasis should be put on systematic confrontation of ends and means in educational policy and on applying analytical tools developed within educational planning. The relevance of the educational process at all levels should be examined in the light of the requirements of the society of today and tomorrow, and conventional ideas about the relationship between educational efforts and achieved results should be tested through systematic research.

However, our knowledge of basic relationships in the educational process is still very scanty, and educational planning methods are in their first stage of development. There is no other major sector of activity in modern societies in which so small a proportion of total resources is being used for systematic research. Perhaps the most important contribution in EIP countries to the effective use of resources allocated to education would be a drastic increase in spending on research and development relevant to the problems facing educational policymakers, planners and administrators and last, but not least, the individual teacher.

STUDY GROUP IN THE ECONOMICS OF EDUCATION
« Financing of Education for Economic Growth »
21st-24th September 1964

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